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IDAHO ENVIRONMENTAL STATUS AND PROGRAM EVALUATION, 1972

Environmental Protection Agency
Seattle, Washington

December 1972

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AND PROGRAM EVALUATION

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U S Department of Commerce
Springfield VA 22151

U. S. Environmental Protection Agency
Region X
1200 Sixth Avenue, Seattle, Washington 98101

December 1972

PREFACE

"It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this Act" Federal Water Pollution Control Act Amendments of 1972, Section 101(b).

"The Congress finds . . . that the prevention and control of air pollution at its source is the primary responsibility of the States and local governments; and . . . that Federal financial assistance and leadership is essential for the development of cooperative Federal, State, regional and local programs to prevent and control air pollution . . ." The Clean Air Act, Section 101(a) and (b).

"The Congress finds . . . that while the collection and disposal of solid wastes should continue to be primarily the function of State, regional, and local agencies, the problems of waste disposal as set forth above have become a matter national in scope and in concern and necessitate Federal action through financial and technical assistance and leadership in the development, demonstration, and application of new and improved methods and processes to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid-waste disposal practices." The Solid Waste Disposal Act, Section 202(a) and (b).

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INTRODUCTION

Environmental awareness in the State of Idaho is high, nearly commensurate with the environmental amenities to be found there. Idaho State government has responded seriously to public sensitivities on the need to protect and restore its water, air and land as useful and valuable assets. Public opinion and State governmental response to it correspond well with the thrust of Federal environmental laws and agency policies which assign to the States the first responsibility and opportunity for action.

But the Federal presence is ever closer to Idaho environmental decisions than before. In many instances, Federal action upon environmental matters is now required by law, where the States fail or are unable to act within the time frame or in agreement with Federal abatement goals established in Federal law and regulation. (The brief discussion of the Clean Air Act and water pollution bill in this report illustrates this point.)

In many respects, the legislators and taxpayers in Idaho are faced with the choice of Federal employees in Seattle and Washington, D.C., issuing environmental abatement orders upon Idaho communities and industries or, as the preferred alternative, empowering and funding State employees in Boise and its field offices to make those decisions. Both Federal and State environmental officials would prefer the latter condition, especially since Congress has evinced a preference for the States to administer these programs so long as national goals are met. The purpose of this report is to aid in reaching that position, for it does not adequately exist now.

In scope, this report concentrates upon immediate needs which can be identified from existing information. No new studies were undertaken to prepare this information--although, in the case of water quality, the unpublished results of a year's water quality analyses in the Coeur d'Alene and Upper Snake problem area are included in a summary. It remains important to note, however, that the solutions to the immediate needs identified in this report will be just that: the accomplishment of another increment in the continuing effort to attain sound environmental management in Idaho. It is intended that these evaluations be viewed as dynamic, to be adjusted and improved as new information is available and first order priorities are accomplished.

From the background of the purpose and scope of this effort, the report begins with an analysis of the strengths and weaknesses, in the view of EPA, of the Environmental Protection Division in the Idaho Department of Environmental Protection and Health followed by examples of Federal programs of assistance and imposing deadlines upon the State agency. A summary of the recommendations in that evaluation follows:

1. In order to meet the requirements of Federal legislation, the State of Idaho should streamline its methods of promulgation of regulations and rules.

2. Authority to apply simplified procedures for enforcement action and penalities should be added to the State environmental law.

3. The IDEPH should be authorized to issue its compliance schedules for air quality control in an enforceable form, such as through a permit program or issuance of regulatory orders.

4. The State should authorize the establishment of a certification program for municipal sewage works and water supply system operators.

5. The State environmental law should specifically empower IDEPH to require discharges of water pollutants to report to the agency periodically on the quality of their effluent.

6. A resolution should be found to the duplication of authority between the District Health Departments and the IDEPH. From this analysis, it is recommended that the legislature assign the District Health Departments directly to the Administrator of IDEPH.

7. State agency capability and performance should be improved, particularly in the areas of field technical assistance and monitoring for all programs and also the water pollution permit program and planning capability, and air quality emission inventory and compliance schedules functions.

8. The staffing levels of the IDEPH should be increased from roughly 43 to at least 62.5, with a total budget of about $1,125,000 of State and Federal funds.

The program evalutation chapter is followed by summary environmental assessment chapters, with individual discussions of water quality, air quality, water supply, solid wastes, radiation and noise abatement in the State of Idaho.

ENVIRONMENTAL PROGRAM EVALUATION

This discussion presents the major issues to be resolved in the areas of basic agency authority, Idaho government organization, and agency manpower and budget to improve the capability of the Idaho Department of Environmental Protection and Health (IDEPH) to protect and restore environmental quality. As will be seen, the new Idaho environmental law and organization have greatly improved the State governmental machinery in the past year. Agency manpower and budget have not increased significantly, however, and the impact of Federal legislation in air and water quality alone will drastically increase the work requirements upon the agency in the next few years.

Rather than proceed with a lengthy description of the legislative base, organization and functional statements, it is assumed that most Idahoans have access to or are familiar with these fundamental descriptors. The discussions concentrate upon the problems which have been identified in this program review, rather than an objective and comprehensive description. The first element of the agency's program analyzed is its fundamental authority, the second is the organization (for the Division itself and within the whole of government in Idaho), and finally the central problem of adequacy of manpower and budget is addressed. An addendum to this chapter addresses the Federal environmental requirements, deadlines and assistance available.

Adequacy of Authority

The basic legislation under which the Idaho environmental program is operated was redrawn by the legislature of the State of Idaho in 1972 in a new "Environmental Protection and Health Act of 1972". The new Act redefines and consolidates several older bills into a more comprehensive authorization covering water pollution, air pollution, visual pollution, noise abatement, and solid waste management, water supply and radiation control. The bill served to streamline the State agency's organization since it pulled several interconnected but separate programs under the administration of one State official and consolidated three separate executive boards with varying degrees of authority into one Board of Environmental Protection and Health with clearly defined responsibilities. Despite the vast improvements in the Idaho environmental bill, there remain some critical improvements to that legislation which are necessary to support and more specifically empower the Department of Environmental Protection and Health to do what it

must do. Of particular concern at the moment, of course, is the approvability of IDEPH's authority to conduct the permit program under the new Federal water pollution law. Since that determination will in many respects rest upon legal interpretation and opinion by Idaho State counsel, a specific checklist is not provided here. Obvious legal improvements needed to adequately empower IDEPH, however, are discussed below in general terms.

Authority and Procedure for Promulgation and Enforcement

The State law provides cumbersome mechanisms for the promulgation of rules and regulations and for the enforcement of all environmental laws against violators. Better methods should be devised in order to comply with Federal standards and in order to better serve the people of Idaho.

Under the present statutory scheme, the power to promulgate rules and regulations is vested exclusively in the Board of Environmental Protection and Health. The seven members of that Board reside in the various portions of the state and frequently must travel great distances to attend the revolving Board meetings. For this reason, regular Board meetings are held only quarterly. In addition, each of the Board members has his own vocation or profession from which he cannot afford to be frequently absent. The per diem compensation which these concerned citizens receive for Board meetings cannot fully reimburse them for their time away from their own businesses. Consequently, more frequent Board meetings, though statutorily possible, would not seem to be a fair demand of these people who essentially donate their time for public service.

On the other hand, rapid developments in the areas of environmental protection and health necessitate a more speedy regulatory response. Moreover, recent Federal legislation on air and water pollution control requires the states to provide quick and reliable regulatory mechanisms in order to qualify for local administration of the control programs. In order to meet these demands, the State of Idaho should streamline its methods of promulgation of regulations and rules.

A solution to this problem which other states have successfully used is a combined process involving both the Administrator of the Department and the existing Board. Under such a system, the Administrator would be authorized to adopt such rules and regulations as are necessary and appropriate to fulfill the legal responsibilities of the Department. These rules and regulations would be subject to challenge by any affected party pursuant to existing

administrative procedures and would also be subject to the scrutiny of the Board. Upon adoption of any rule or regulation, the Administrator would be obligated to submit copies to the Board. If a majority of the Board made a timely written objection to any rule or regulation so promulgated, the operation of that rule or regulation would be suspended pending consideration by the entire Board at its next regularly scheduled meeting.

This system of promulgation is particularly commendable since it combines the best of both worlds. It takes advantage of the speed and expertise available to the Administrator while preserving the benefits of review and supervision by the Board.

Similar problems exist in Idaho in the mechanisms for enforcement against violators of environmental laws, rules and regulations. A major discharger of pollutants in violation of agency regulations might properly be granted 21-day notice of public hearing, written decision by the Board of Environmental Protection and Health, and a specified period for corrective action before the courts are employed against him. However, these provisions are too prolonged and costly to be effective against a small or intermittent discharger, and are therefore seldom invoked. As one astute Idaho analyst stated it, "When a pickup backs up to the Snake River and dumps a load of garbage in the river, it just doesn't make sense to say, 'I'll give you 21 days to stop that.'" The humor in his example dissipates, however, when considering the need for the State environmental agency to possess authority to immediately halt, or at least penalize, intermittent dischargers of oil, animal carcasses, sewage from tank trucks which pump septic tanks, or larger municipal or industrial discharges which periodically result from failures in treatment systems, and similar discharges. Authority to apply simplified procedures for enforcement action and penalties should be added to the State environmental law.

Enforceability of Air Pollution Compliance Schedules

Under its present authority, the IDEPH cannot develop fully enforceable compliance schedules as required by the Clean Air Act. More precisely, the cumbersome procedures presently provided would be so time-consuming as to quickly exhaust the total staff and executive time of the Department and Board if applied to each of the entities for which air quality compliance schedules must be set under the Federal act. In the redesign of the legislated enforcement authority to the IDEPH, specific attention should be directed to authorization for the agency to directly issue its

compliance schedule requirements for air quality control in an enforceable form, such as through a permit program or issuance of regulatory orders.

Operator Certification

The State should authorize the establishment of a certification program for municipal sewage works and water supply system operators. The certification program has potential as a mechanism for up-grading skills and salary rates commensurate with experience and expertise in this little known profession. The operator of a sewage treatment plant is responsible for the treatment efficiency of what may be a multi-million dollar facility. The considerable investment by the public can be negated by improper plant operation and, more positively stated, the need for advanced or enlarged treatment facilities can sometimes be avoided by operating existing facilities at peak treatment efficiencies. Similarly, the operator of a municipal water supply system can provide, if adequately trained and experienced, more effective health protection to the citizens. The intent of such a certification program is obvious. As with teachers and others, a certification of professional achievement can serve to motivate members of that profession toward higher levels of performance of their services.

Authorization for Reporting Requirements

In a manner similar to that presently authorized relative to air emissions, the state environmental law should specifically empower the Department of Environmental Protection and Health to require dischargers of water pollutants to report to the agency periodically on the quality of their effluent.

Conflict of Authority with District Health Departments

A final point with regard to the agency's legal authority should be made. The legislation creating the District Health Departments in Idaho tends to cloud the authority and responsibility of the Department of Environmental Protection and Health in many respects. The District Health Departments were established as nearly autonomous local boards and empowered to assume authority over environmental (and health) matters at their discretion. In practical application, the Districts have suffered from lack of funds to enter into the responsibility for sewage treatment and air pollution, although they do exercise some authority over solid

wastes management. The potential for contradiction or preemption of State priorities, policies, and orders is, however, a legal cloud upon the State's environmental protection agency which should be removed.

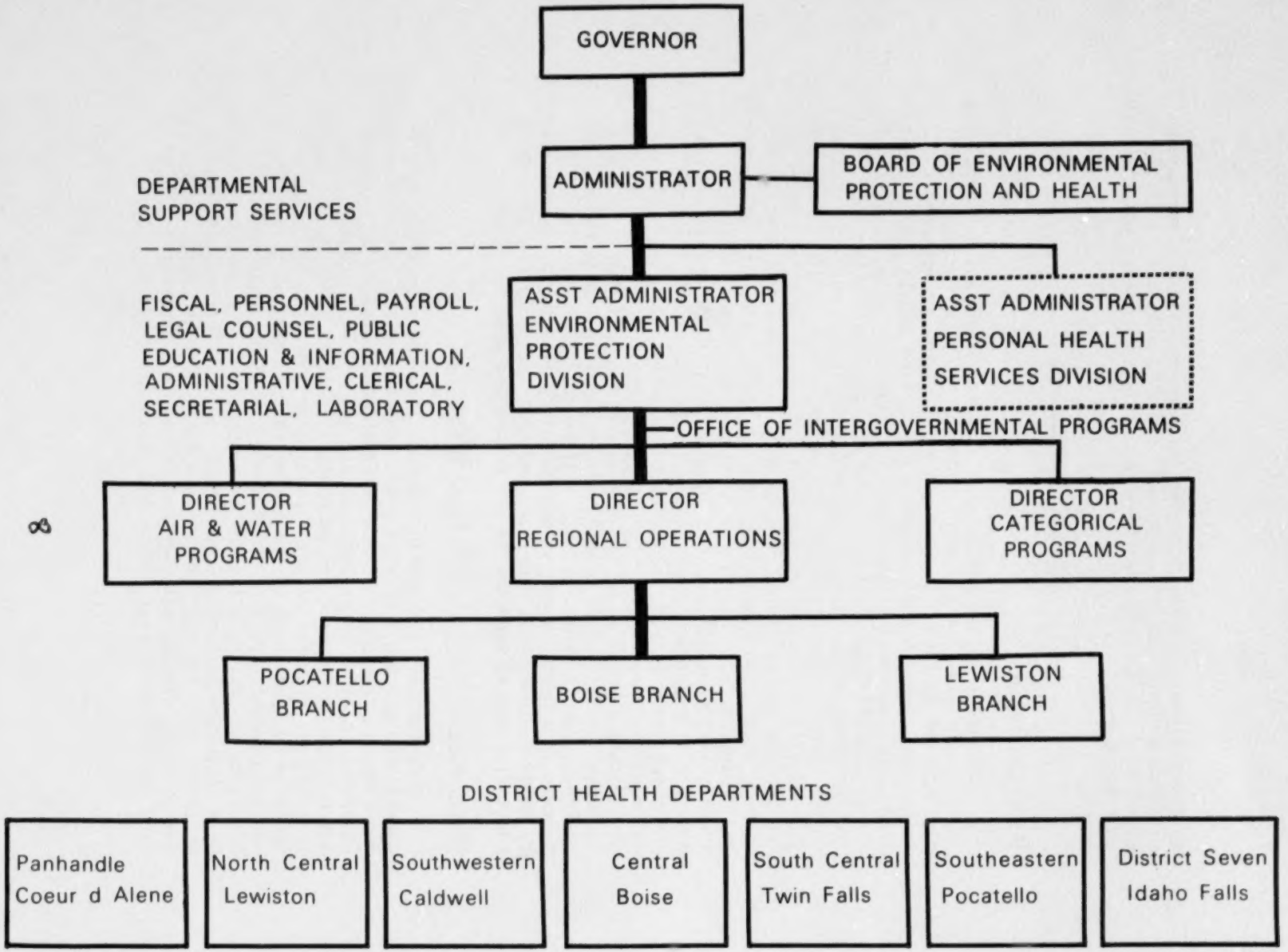
Organizational Issues

The State Agency

Subsequent to the enactment of the new Idaho environmental law in 1972, the Governor proceeded from the few major organizational elements set by that bill (i.e., a Division of Environmental Protection within the Department) and created within that division a new organizational alignment as described in the adjacent figure. The most significant feature is, of course, the placement of all the environmental programs into one, coordinated unit--as opposed to the several separate heads (for water, for air, etc.) reporting individually to the department head and responsible for separate individuals in the field. Add to this the Governor's feature of a strong, expert and experienced central operations force complemented by integrated regional, or field, forces in three locations of Idaho's vast geography, and it is clear that efficiencies and improved public service are provided in the structure of Idaho's environmental programs. The Governor has thus structured the State environmental program in a manner which should enhance achievement of the dual objectives of (1) State-wide accomplishments in environmental protection in priority order and with equity among like abatement requirements, yet (2) implementation of the State-wide program in a manner which allows normal operations to be conducted by those closest, most familiar, and most accessible to the public and environmental problems in the geographic area assigned.

Organizational Conflict with Local Districts

Unfortunately the smooth internal lines of communication are complicated and their effectiveness lessened by the District Health Departments. The District Health Departments appear, to an outside observer, to be an organizational and governmental anomaly. The seven local departments are autonomous, that is, they do not report to a central body for policy direction or coordination. They are operated by appointees of the member county commissioners. The county commissioners also provide the operating funds for the Districts by levying a tax for that purpose (which amount is matched by a statutory percentage from State funds). The costs of the Districts thus add another tax upon the public in addition to those tax revenues already being channelled into environmental protection (and health) by Federal, State and local governments.


GOVERNOR
ADMINISTRATOR
BOARD OF ENVIRONMENTAL PROTECTION AND HEALTH
DEPARTMENTAL SUPPORT SERVICES
FISCAL, PERSONNEL, PAYROLL, LEGAL COUNSEL, PUBLIC EDUCATION & INFORMATION, ADMINISTRATIVE, CLERICAL, SECRETARIAL, LABORATORY
ASST ADMINISTRATOR ENVIRONMENTAL PROTECTION DIVISION
ASST ADMINISTRATOR PERSONAL HEALTH SERVICES DIVISION
OFFICE OF INTERGOVERNMENTAL PROGRAMS
DIRECTOR AIR & WATER PROGRAMS
DIRECTOR REGIONAL OPERATIONS
DIRECTOR CATEGORICAL PROGRAMS
POCATELLO BRANCH
BOISE BRANCH
LEWISTON BRANCH
DISTRICT HEALTH DEPARTMENTS
Panhandle Coeur d Alene
North Central Lewiston
Southwestern Caldwell
Central Boise
South Central Twin Falls
Southeastern Pocatello
District Seven Idaho Falls

Continuing the problems of overlapping of jurisdictions, the counties themselves are charged with ultimate service responsibility in some areas, for example, solid wastes management. A conflict of interest is thus institutionalized whereby the District boards act as a regulatory body for the county officials who appoint them to their board positions and who provide their operating funds and salaries. These conditions must be frustrating to all involved: the public, the counties, the District boards, the IDEPH. The frustrations result from unclear and potentially conflicting responsibilities. A citizen of Idaho with complaint or concern about a refuse dump, for example, may be shuffled from his municipal offices, to the county offices, to the offices of the District Health Department, to the regional office of the IDEPH, back to the county, etc., etc., and yet not find a satisfactory response or fully responsible official to address on the issue. Likewise, a responsible official of any of the governmental units cited does not relish the necessity to "pass the buck" on environmental and health matters.

The system therefore creates unnecessary friction among State and local employees who are serving for a common public purpose. Potential for inequities in regulation and enforcement of environmental control exists; an aggressive District board might require abatement measures in one county while similar or worse conditions in a neighboring district go unregulated. Uniform criteria for priorities and consistency in enforcement are unlikely under these conditions.

A resolution must be found to the inherent duplication of authority between the District Health Departments and the IDEPH. Several alternative courses of action are undoubtedly possible, and should be explored for their relative effectiveness. From this analysis, it is recommended that the legislators and executive branch decision-makers in Idaho consider direct legislative change. The legislature should assign the District Health Departments directly to the Administrator of the Department of Environmental Protection and Health. The legal cloud would be removed from the authority of the Department, and the burden for resolution of the problem would be lifted from the shoulders of the Department, thereby reducing the potential for dissension and enhancing the acceptance of the new system.

To summarize the organizational discussion, then, the internal organization of the environmental programs of IDEPH appears greatly improved and the program well organized for action upon the environmental problems in Idaho in a responsive way. The single, major

structural improvement remaining is clearly the need to resolve the duplication of the Districts with the Department.

Agency Manpower and Budget

One method of weighing the relative adequacy of the IDEPH's manpower and budget is a comparative one. The adjacent table of comparison shows that, in terms of State funds devoted to five selected environmental programs, Washington spends over four and a half times and Oregon over three and a half times as Idaho. Expressed in terms of State funding of the agency on a per capita basis, however, Idahoans are doing relatively well: Washingtonians spend roughly 67 cents per person, Idahoans 66 cents, and Oregonians (known nation-wide for the vigor of their environmental programs) spend 88 cents per person for all the selected programs.

A comparison of the salary rates in the three States shows them to be roughly even. Therefore, the low dollars per man year in total program costs in Idaho, ($16,200), as compared to Washington, ($22,560), and Oregon ($17,850), indicate a personnel-intensive program typical of most smaller State agencies. In other words, the budget dollars available--after salaries--for travel, supplies and equipment are very low in Idaho, imposing program performance constraints.

As was verified in the program evaluations, the staff of the IDEPH have insufficient time or budget to conduct the numbers of inspection, monitoring, and field study necessary to properly operate the programs. This is likely the most significant deficiency in the State's program and bears true through all of the agency's environmental programs.

--Water quality surveillance, intensive basin water quality evaluations, inspections and monitoring for compliance with State permits and orders are admittedly minimal.

--Air quality surveillance, study and compliance monitoring are similarly deficient. (Significantly, the agency was forced to contract out the development of the State air quality implementation plan and studies to characterize the sources of high particulate levels in several areas of the State and to inventory emission sources rather than undertake the efforts themselves.)

--Water supply system evaluations are impossible with the low staff levels available, so that the agency must rely on information supplied by the system operators. Such self-reporting is an

COMPARISON OF ESTIMATED AGENCY BUDGETS, WASHINGTON, OREGON, IDAHO
SELECTED ENVIRONMENTAL PROGRAMS, FY 1973

	State	Federal	Total	M-Y	$/M-Y
Washington:					
Air pollution control	$ 524.9	$350.0	$ 874.9	22.4	
Water pollution control	1,295.0	285.5	1,580.5	81.2	
Solid wastes management	63.0	120.0	183.0	11.0	
Water supply	215.0	--	215.0	10.0	
Radiation control	179.0	15.0	194.0	10.5	
	$2,276.9	$770.5	$3,047.4	135.1	22.56
Per capita	67¢		89¢		
Oregon:					
Air pollution control	431.4	61.3	492.7	24.0	
Water pollution control	875.6	218.4	1,094.0	65.0	
Solid wastes management	133.0	22.4	155.4	10.0	
Water supply	243.6	--	243.6	11.0	
Radiation control	174.0	--	174.0	11.0	
	$1,857.6	$302.1	$2,159.7	121.0	17.85
Per capita	88¢		103¢		
Idaho:					
Air pollution control	87.6	81.7	169.3	10.5	
Water pollution control	253.4	110.6	364.0	22.6	
Solid wastes management	53.2	29.2	83.4	5.1	
Water supply	43.5	--	43.5	2.7	
Radiation control	35.0	--	35.0	2.0	16.20
	$ 472.7	$221.5	$ 695.2	42.9	
Per capita	66¢		98¢		

[a]The estimates shown are calculated ones developed from available budget information and checked for rough accuracy with the State agencies. Adjustments from actual budget figures were made in an attempt to arrive at comparable program budgets; i.e., local funds were not included, non-comparable program functions were excluded, and management and administrative costs were distributed on a roughly proportional basis over the selected program costs.

NOTE: These are comparisons of the three State budgets prior to enactment of the Federal Water Pollution Control Act Amendments of 1972. Both Oregon and Washington are requesting increases by their legislatures to allow them to meet the workload imposed by that Federal law.

essential part of a comprehensive water supply program but a poor substitute for regular inspections, technical assistance to and training of system operators, and periodic full system evaluation to determine the adequacy of the design of new systems or the adequacy of maintenance at existing systems.

--The solid waste management program is now being operated almost exclusively from Boise, with the few man-years available devoted to development of State-wide regulations, inventory development by mail, and similar operations which the staff themselves would recommend be supplemented by field personnel performing technical assistance, inspection and evaluation.

--Radiation sources in the State are being sufficiently regulated by the two professionals in Boise, but inspections and compliance in the medical X-ray area have been inadequate. Over a hundred medical and dental X-ray machines in Idaho have never been inspected.

--Given these examples, it seems unnecessary to add that no noise level measurements have been taken in Idaho, since the program authority has not been exercised to-date.

--Finally, even though the State's pesticide use regulation program operates from the State Department of Agriculture, it seems a disservice to the public that regular samples for pesticides in the waters of this intensively agricultural State are not now being collected and analyzed by the State environmental staff.

This point has been belabored for purpose. The citizens and legislators of Idaho should be fully aware that, while they empower and organize the State environmental program, these features alone will not result in adequate environmental protection unless the agency is concurrently staffed and funded at levels which allow environmental monitoring and field inspection for preventive and compliance purposes. Sound and reasonable State regulations, policies and abatement orders will fail if they proceed from inadequate data to characterize the problems to be resolved or if the State agency fails to assure compliance with the preventive and abatement actions it requires.

Other increased functional capabilities and performance are also needed in both the air and water programs. In the case of water, the planning and permitting functions are now only minimally provided, and should be increased to meet the requirements of the new Federal Water Bill. In the case of air, the staff capability for emergency episode response, completion of the emission inventory, and development of compliance schedules is now too low. Program staff increases to meet these needs and the surveillance emphasized above are the basis for the recommended levels in the following table.

RECOMMENDED MANPOWER AND BUDGET LEVELS - FY 1974
DIVISION OF ENVIRONMENTAL PROTECTION - IDAHO

	Water quality	Air quality	Solid wastes management	Water supplies	Radiation	Noise	
Regulations and standards	4	2	1	.5	2	.5	
Planning	3	1	2				
Environmental engineering and assistance (field)	7	3	3	2.5			
Compliance and environmental monitoring (field)	6	5	1	2	1	.5	
Laboratory	4	3		1			
Administrative support	3	2	.5				
Enforcement (legal services)	1	.5	.5				
	28	16.5	8	6	3	1	62.5

Recommended: 62.5 man-years at $18,000, or $1,125,000 budget for FY 1974.
Minimum projected Federal support, $223,000

Federal Assistance and Deadlines

The IDEPH is presently operating with $300,000 in Federal grants to support its program efforts. The funds become available from selected grant programs in Federal law which provide program support grants in air pollution control (Section 105, CAA) and water pollution control (Section 7, old FWPCA) and planning funds (Section 3(c), old FWPCA) for water pollution abatement. In addition, two local governments in Idaho are conducting solid waste planning efforts with $172,700 in Federal grant support, and $4.4 million is available to assist Idaho communities in the construction of municipal sewage treatment works.

Federal technical assistance is available to the IDEPH both directly, as in the case of intensive water quality studies in the Upper Snake Basin during the past year, and through program coordination efforts. Staff coordination in the industrial waste discharge permit and municipal construction grants programs will be accomplished by the assignment of Federal employees to work in the State offices in Boise. Technical studies to characterize the sources of high air particulate levels in Idaho are presently underway with Federal contract moneys. And water quality evaluations are being concentrated in the Coeur d'Alene area at the present to improve the data base for abatement program development for that intensively polluted stream.

The nature of the Federal role has been altered in recent years by the establishment of Congressionally mandated deadlines for achievement of air and water pollution control objectives. Congress has set broad constraints upon the planning options open to the State governments for water and air pollution. National goals in air quality have been set for the entire nation and are to be achieved by mid-1975. Similarly, in the amendments to the Federal water pollution control legislation in 1972, the Congress set national goals for achievement of water quality satisfactory for recreation and fish and wildlife by 1983. An interim date of 1977 is set for achievement of best available treatment technology at all dischargers.

These sorts of broad national policies place severe burdens upon the State environmental programs for specific actions within a very short time frame. The laws provide Federal responses very quickly where the States are unable or fail to act. Two summary tables of major state actions required by the Federal water and air pollution laws follow. They summarize very briefly requirements contained in the two long and complex laws and supplemented

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by hundreds of pages of Federal regulations under which the State and Federal programs are administered. A careful reading and understanding of those two lists alone should give a sense of the wide range and quantity of workload presently falling upon the staff of the Division of Environmental Protection (in air and water alone).

SUMMARY OF DEADLINES FOR MAJOR STATE ACTIONS REQUIRED IN FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972

DEADLINES*	MAJOR ACTIONS	LAW SECTION
1972 Mid-November	Submit for approval intrastate water quality standards already in effect.	303(a)(2)
After mid-December	Submit information to qualify for permit authorization.	402(b)
December 31	FY 72 and earlier construction grants funds must be obligated.	Previous legis.
1973 Mid-February and July 1 annually	Submit report on status and plans for water pollution control programs - for program grant.	106(f)(3)
Mid-February and periodically thereafter	Submit for approval State's continuous planning process.	303(e)(2)
Mid-March or thereafter	Assume final permit authority or turn over State permit program to EPA if permit authority not approved for State.	402(a)(5)
	Identify areas with substantial water quality control problems as a result of urban-industrial concentrations or other factors.	208(a)(2)
Mid-April	Adopt and submit changes to existing interstate water quality standards identified by EPA or EPA initiates promulgation action.	303(a)(1)
	Adopt and submit new intrastate standards, if any.**	303(a)(3)(A)
Mid-June	Adopt and submit revisions to existing intrastate standards or EPA initiates promulgation action.	303(a)(2)
Mid-July	Designate boundaries (interstate & intrastate) and area-wide wastewater management planning organizations for those areas.	208(a)(2) and (3)
Mid-October	Submit applications for payment or reimbursement of construction grants.	206(c)
	Adopt and submit revisions to new intrastate standards or EPA initiates promulgation action.**	303(a)(3)(C)
1974 Mid-April	Identify waters for which effluent limits not stringent enough, in priority, order, and estimate total maximum daily load for those waters, or EPA designates them for incorporation into State plan.	303(d)(2)
June 30	FY 73 construction grant funds must be obligated.	205(b)(1)
Mid-July	Areawide planning process in operation (local organizations for those designated by States; otherwise State agency for remaining areas.)	208(b)(1)
1975 January 1 and annually thereafter	Submit water quality inventory report.	305(b)
June 30	FY 74 construction grant funds must be obligated.	205(b)(1)
1976 Mid-July and annually thereafter	Certify and submit first areawide wastewater management plans.	208(b)(1) and (3)
Mid-July	Designate areawide waste management organizations.	208(c)(1)

*Dates indicated are approximate; in addition, some are intended to indicate the latest dates by which the indicated actions are required to be complete under the law. In cases where the indicated actions are dependent upon the dates of other actions, the actual completion date might conceivably occur at an earlier time than indicated.

**Not relevant in the case of the States comprising EPA Region X.

AIR STANDARDS IMPLEMENATATION PLAN DEVELOPMENT DEADLINES

JULY '72	SIP approved or promulgation activities begun
FEBRUARY '73	State's first semiannual report due--progress on impl. plan State's compliance schedules due State's first and second quarterly reports due--air quality data State's emergency episode control plans due (Communication package, etc.)
APRIL '73	EPA approval of transportation controls
MAY '73	EPA approval/disapproval of compliance schedules State's third quarterly report due
JULY '73	State emergency episode air quality monitoring network operational State proof of legislative authority for transportation controls due State SIP for secondary NAAQS due (18-month extension)

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IDAHO 18 MONTH EXTENSIONS--SECONDARY STANDARDS

Particulate matter	Eastern Idaho
	Eastern Washington-Northern Idaho
	Idaho Intrastrastate
	Metropolitan Boise
	Eastern Washington-Northern Idaho
Sulfur Oxides	Eastern Washington--Northern Idaho Interstate

AUGUST '73	State's second semiannual report due State's fourth quarterly report due EPA promulgation of compliance schedules, if required

CURRENT ENVIRONMENTAL SURVEY

Idaho is in most respects fortunate in the quality of her environment. With the single, notable exception of the Kellogg, Wallace, Mullan area, neither her air nor her water is grossly polluted. Her problems of solid waste disposal are localized, and their potential severity mediated by low population density and low relative degree of industrialization. Her domestic water supplies are abundant and generally of good natural quality.

But the very excellence of Idaho's environment imposes a handicap upon the State's environmental protection activities. By the nature of the State's situation, it is imperative that the major thrust of its programs be in the direction of protection, of conservation. Yet national policy, environmental technology, and the bulk of the institutions that have developed from them are focussed almost exclusively upon abatement practices.

Idaho, then, must wrestle with the problems of preserving the general excellence of her environment, and of making improvements in gray areas where the interaction of man's activities with natural conditions may be pollution, but may be natural phenomena; and she must do it with crude tools suited to the circumstances of New York, or Ohio, or South Carolina who will, if they are fortunate, have improved in a decade or two their physical environment to a point that faces them with problems of the complexity and uncertainty that face Idaho today.

The imperatives of the situation demand that Idaho's environmental programs must be of high quality, sophisticated, innovative. Because her environment is so much better, her environmental activities must go beyond the minimum, gross force efforts appropriate for more polluted jurisdictions. She must be a pioneer, developing procedures that the rest of the nation may apply in the future.

The brief survey of environmental conditions in Idaho that follows reflects in some degree the complexity of the environmental questions that persist in Idaho. It reflects, too, the variety of the activities gathered together in the State Department of Environmental Protection and Health. The environmental background is described--largely in terms of deviations from established standards--in sections dealing with air pollution and water pollution. In the cases of radiation and public water supplies (administrative and procedural matters directed to public health maintenance) and solid wastes management, the emphasis is

programmatic, with special attention to weaknesses in terms of authority or resource allocation that impinge upon the conduct of programs. In the case of noise pollution, where neither an objective description of conditions or a program exists, the emphasis is developmental; that is, it focusses upon steps that may be taken to initiate effective noise pollution control programs.

PUBLIC WATER SUPPLY

Legislative Authority

Basic health regulatory authority over public water supplies is provided in Idaho Code 37-2102: domestic water to be protected. Sections 39-112 authorize the State Board of Health to establish rules and regulations to control water quality to be used for public water supply; and Section 39-113 to control means of collection, treatment and distribution of drinking water.

General regulations governing protection of public water supply were issued in November 1964. These regulations adopt the 1962 U. S. Public Health Service Drinking Water Standards and provide that water systems be maintained in accordance with these water quality standards. Additional standards cover design and construction of facilities for collection, treatment, storage and distribution of water for public use. A public water supply system is defined by the General Regulations as one which furnishes,

> water for drinking or general domestic use in incorporated municipalities; or unincorporated communities where ten (10) or more separate lots or properties are being or intended to be served.

The statute creating the DEP&H transferred the functions to the new agency.

In addition to the general comprehensive appropriative water rights section of the Code which are of importance to public water supplies, Section 42-238 requires that minimum well construction standards be adopted to protect groundwater from contamination. Regulations which were adopted in 1968 require that public water supply wells shall meet all State Health Department requirements.

The enabling legislation and the 1964 rules and regulations are generally adequate to permit operation of an acceptable public water supply program. Updating the regulation to reflect interim changes, clarification of the definition of a public water supply, adoption of procedures to regulate proliferation of water supply systems in congested areas, and legislation establishing a mandatory operator certification program are, however, desirable elements to improve the water supply programs' legal base.

State Water Supply Program

Funds expended for public drinking water protection in Idaho are inadequate to support a comprehensive program. The water supply effort in FY 1971, including field work, administration, and laboratory support, operated on a budget of approximately $33,000. Nationwide studies by the Water Supply Programs Division indicate that an adequate State drinking water program would require an annual expenditure of $450 per system. For the 274 systems in Idaho, then, expenditures exclusive of laboratory support should total $125,000.

Total professional staffing for water supply activities within the DEPH is presently three-quarters of a man-year. Evaluation of the program indicates that many important activities are not being performed, or are being performed superficially. Evidence of this fact is illustrated in a 1971 survey which found that the length of time since the last sanitary survey of public water supply systems averaged seven years, the range being from current to seventeen years.

On the basis of data developed as a result of the community water supply study, at least four man-days annually are required per supply to provide surveillance service such as plan review, surveys, report writing, review of operations and water quality reports, training, etc. For the 274 Idaho supplies (using 220 man-days/year) the required professional staff would be five man-years. Assuming adequate clerical support at a ratio of one clerical to three professional, an additional 1.7 man-years would be required to support the professional staff.

State files show letters of instruction have been written to purveyors periodically advising them of the State's minimum requirements for bacteriological sampling. Staff manpower limitations have precluded adequate follow-up work, however, and compliance with the bacteriological sampling frequencies has not been attained by many supplies. This is particularly true of the smaller supplies which in general receive less surveillance and have more facility deficiencies than larger systems. Because the bacteriological sampling program is essentially the only continuous surveillance provided for smaller supplies, it is doubly important that sufficient bacteriological samples be submitted.

Follow-up to unsatisfactory bacteriological samples is not consistent throughout the State, and is in some cases completely lacking. The practice is particularly significant in isolating

specific problems. More rapid reporting of unsatisfactory samples to the water supply operator and follow-up by DEPH engineers will be required to improve the surveillance program and provide a desirable degree of health protection.

It is estimated that the State currently expends approximately $10,500 per year for bacteriological and $6,500 per year for chemical testing of public water supplies. These figures are based on laboratory cost estimates provided by the State. An adequate water quality surveillance program for each supply has been defined by the USPHS to include a complete chemical analysis each year and bacteriological sampling at a rate based on population served. Cost estimates for laboratory support for that level of surveillance of the 274 supplies in Idaho are approximately $12,000 for bacteriological analysis and $13,000 for chemical analysis.

Both bacteriological and chemical laboratory operations were reviewed and found in a 1971 survey to be in general compliance with the provisions of Standard Methods. (The major laboratory deficiency was observed in the installation at Idaho Falls, where the laboratory is deficient in space and personnel with relation to the level of effort. Requests for $90,000 in funds for construction of a new building and additional equipment have not been met.)

Current Status of Water Supplies

Idaho's 274 public water supplies serve an estimated 490,000 persons, about 70 percent of the State's population. In 1971, DEPH and EPA conducted a survey of 28 public water supply systems serving 103,000 persons. These systems were selected to provide a representative sample of the variety of system types and sizes found in Idaho. That survey indicated that:

Four systems did not meet bacteriological quality standards on the basis of samples taken during the survey.

Ninteen systems failed to make sufficient bacteriological determinations during the 12-month period prior to the survey to provide a satisfactory probability judgment of adherence to standards.

One system did not meet mandatory chemical standards for drinking water quality;

Seven systems did not meet one or more of the recommended chemical drinking water quality standards;

Fourteen systems needed physical improvements at the source of the water supply;

Ten systems had either less than desirable treatment facilities or less than desirable protection of the source;

Eleven systems had deficiencies in distribution facilities or their operation;

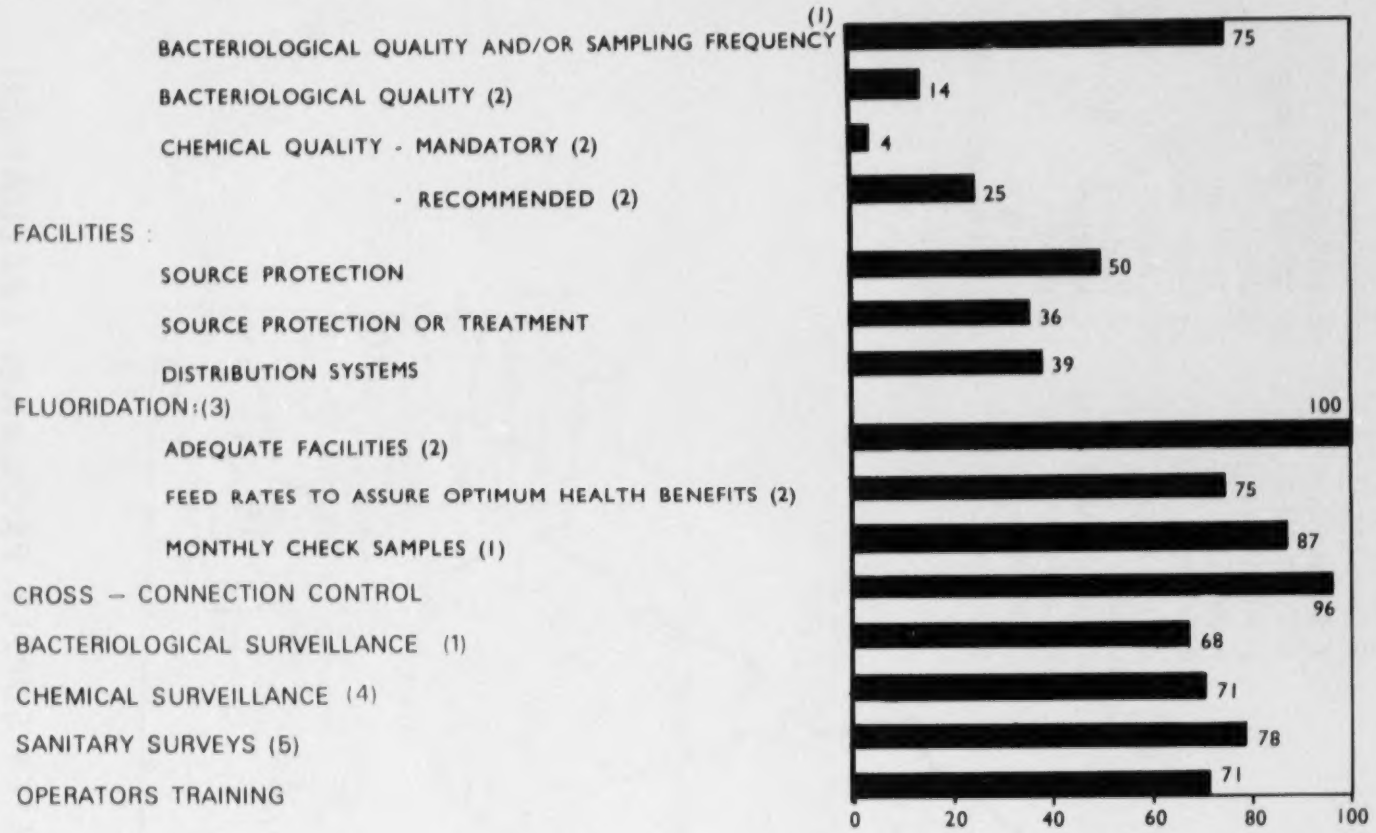
Twenty-seven systems did not have cross-connection controls sufficient to eliminate potential distribution hazards;

Twenty systems had only part-time operators; and only eight systems employed operators who had received formal water supply training;

Nineteen systems did not meet standards for bacteriological evaluations; twenty systems did not meet standards for chemical evaluations (i.e., did not conduct determinations at the appropriate frequency);

Twenty-two systems had not been inspected by a representative of DEPH within the previous twelve months.

Only a single documented instance of a public health incident traceable to substandard drinking water in the State of Idaho over the last decade has occurred (periodic summer dysentery in Rockland during the late nineteen-sixties, culminating in an outbreak of gastroenteritis in June 1970). However, it is clear that the status of public water supplies and their regulatory protection is such that the potential for other, and more widespread, incidents is present.



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(1) DATA FROM PERIOD 12 MONTHS PRIOR TO SURVEY
(2) DATA FROM SAMPLES COLLECTED DURING SURVEY
(3) EIGHT FLUORIDATED SUPPLIES OPERATIONAL
(4) REQUIREMENT – CHEMICAL SAMPLE WITHIN 3 YEARS PRIOR TO SURVEY
(5) REQUIREMENT – SANITARY SAMPLE WITHIN 1 YEAR PRIOR TO SURVEY

FIGURE 3 **IDAHO WATER SUPPLY PROGRAM EVALUATION**

1 BOISE
2 LEWISTON
3 GRANGEVILLE
4 ST ANTHONY
5 ST MARIES
6 ABERDEEN
7 ARCO
8 COUNCIL
9 POTLATCH
10 RIRIE
11 HORSESHOE BEND
12 HAGERMAN
13 FRANKLIN
14 LAPWAI
15 HAZELTON
16 FIRTH
17 ARIMO
18 ROCKLAND
19 MOYIE SPRINGS
20 ATHOL
21 MIDVALE
22 EAST HOPE
23 CASTLEFORD
24 STANLEY POND W.A.
25 MURPHY
26 HOPE
27 HOLLISTER
28 EUGENE OUTLOOK W.A.

IDAHO WATER SUPPLY PROGRAM EVALUATION

NOISE POLLUTION

The Federal noise control law requires the EPA to set source emission standards for certain new products. Particular attention is to be given to construction, transportation and electronic equipment and to motors and engines. EPA is also to set source emission standards for railroad and motor carriers and to recommend additions or changes in aircraft noise controls. States and municipalities, then, continue to have major noise control responsibility, including that for source emission standards for any new products not legislated by the Federal government, operating standards for any sources already on the market or in use, ambient standards, zoning codes, performance standards, building codes, and--most critically--land use planning. It is obviously the decision of each State as to how much authority it exercises and how much is to be left to other political subdivisions. Generally, zoning and building codes are considered local responsibilities. In some situations, operating emission standards and land use planning, particularly in regard to transportation planning (including airport development) are considered State level legislative functions in most jurisdictions.

Idaho has need for both preventative and abatement noise control programs. With a substantial proportion of its land mass of a wilderness nature of outstanding utility for recreation, measures should be taken to control the threat to the wilderness by recreational vehicles. In addition to wilderness areas, existing and potential developed areas can be protected by proper land use planning and proper location of noise-sensitive uses and noise-generating uses. Throughout already developed areas, noise problems seem to be primarily the result of faulty planning. Property juxtaposed to airports, industry, and highways has been zoned for residential use. The very activities that are incompatible and need to be deliberately separated have been thereby encouraged to be neighbors. Building permit issuance criteria should include consideration of the existing noise environment of the site and what effect the particular project will have on the noise environment if completed. Building codes might then cope with a noisy site by requiring specific acoustical treatment.

In many States, the legislature pursues enabling legislation directing a State agency such as an environmental health unit to particular noise sources that require standard setting or some other

regulatory mechanism. It is then up to the agency to determine the extent of the problem and decide which areas to control and what regulatory mechanisms will be used. A few State legislatures have set a maximum sound level standards directly. Further, State legislation can require consideration of noise in all comprehensive planning, transportation development, zoning and performance criteria utilized by municipalities.

As the very least, State enabling legislation should be developed and a State noise control office should be established to determine the extent of the noise problem and appropriate control methods, and to report its findings to the State decision-makers in preparation for further action.

CONTROL OF RADIATION SOURCES

Effective control of hazards from all sources of ionizing and nonionizing radiation is a formidable task. The basic requirements for comprehensive control of radiation hazards in Idaho are (1) a strong legislative enabling Act, (2) comprehensive regulations, (3) a technically competent and adequate staff, (4) frequent inspections, firm compliance and enforcement actions and (5) an environmental surveillance capability.

Legislation

Idaho passed the Radiation and Nuclear Materials Act in 1967. This is commendable, strong legislation. It states the policy of protecting the public health and provides sufficient authority for the promulgation and enforcement of regulations designed to minimize and control the hazards from all sources of radiation not under the control of the AEC. The Act provided for Idaho to assume regulatory authority over certain radioactive materials, sources and special nuclear materials formerly under control of the Atomic Energy Commission. In 1972 the basic Act was amended to provide for regulation of nonionizing sources of radiation.

The Act provided Idaho with very important authority in regulating such major radiation sources as medical fluoroscopic, radiographic and theraputic X-ray machines, dental X-ray machines, all other X-rays used in any of the healing arts, radium and all other radioactive materials. In both medicine and industry, source materials such as uranium and thorium, special nuclear materials such as plutonium, uranium and the multitude of nonionizing sources such as microwaves and lasers are regulated. In fact, the State of Idaho has statutory authority to maintain regulatory control over practically every source of radiation in the State with the exception of the NRTS (National Reactor Testing Station), which is under the jurisdiction of the AEC. The total number of sources under Idaho's jurisdiction is approximately 1500.

Regulations

In 1968 the Idaho Department of Health adopted Rules and Regulations for the Control of Radiation in the State of Idaho. These are comprehensive regulations, adequate to protect the public health and safety from radiation hazards. The regulations are broad in scope, applying to all persons who receive, possess, use, transfer, own or acquire any source of radiation, except those few facilities regulated by the AEC. The regulations provide for the licensing and registration of ionizing radiation sources and establish standards for protection against radiation. They have separate, specific requirements for industrial radiographers, users of X-rays in the healing arts, users

of sealed radiation sources in the healing arts, and for stabilization of mill tailings piles. The regulations are sufficient to protect against radiation. They may be amended periodically to conform to AEC regulations, EPA guidance and to remain consistent with information and recommendations from recognized expert sources.

Medical X-Ray Sources

Recognized authorities agree that diagnostic medical and dental X-ray exposure is by far the most important contributor to population dose from man-made sources of radiation. It can reasonably be estimated that over 90 percent of all man-made radiation to which the population of Idaho is exposed results from medical X-ray exposure. The major effort of radiation control should be directed to reducing exposure to the lowest practical level from medical and dental X-ray exposure.

There are over 800 medical X-ray machines in Idaho and they are currently increasing at a rate of about 20 units per year. Each of these X-ray machines should be registered and routinely inspected for compliance with applicable provisions of the regulations. Based upon recommended inspection schedules for various types of X-ray use, there should be a minimum of 350 inspections each year. Including the follow-up compliance visits, the number of inspections for medical X-ray units could total 400 each year to provide adequate protection.

Radioactive Material Sources

The authority to assume and perform regulatory control over radioactive materials and specified quantities of source and special nuclear materials was transferred to Idaho from the AEC in 1968 through an agreement between the State and the AEC. Because of this formalized agreement, radioactive materials have received a high proportion of total staff attention. There are presently 91 radioactive material licenses in Idaho. For each of these, the license application must be reviewed and evaluated, and issued with written conditions specifying kinds and amounts of materials. Inspections must be made to determine compliance with the regulations and licensing conditions. All of these efforts consume considerable time. The number of radioactive material licenses has increased from 35 in 1968 to 91 in 1972. This is a growth rate that places continually increasing demands on the small State regulatory staff. Since 1968 over 400 licensing actions have been conducted by the staff. As a part of their compatibility program, the AEC reviews the radioactive materials part of Idaho's radiation control program. Over the years, they have found that the program's licensing, inspection and enforcement actions are generally adequate to protect the public from the hazards of radioactive materials.

National Reactor Testing Station

The largest single radiation facility in Idaho, the National Reactor Testing Station, is under the jurisdiction of the AEC. Because of its size and complexity of operation, a more detailed description of NRTS is thought to be appropriate.

The NRTS was established in 1949 by the AEC to promote reactor development by building, testing and operating various types of nuclear reactors, allied plants and equipment. By 1971, 49 reactors had been built at NRTS and 16 were still operating or operable. There are also 23 related nuclear facilities at NRTS including the storage of high level radioactive waste.

The NRTS is situated on a desert plain in southeastern Idaho at an average elevation of 4,865 feet. The station is comprised of 571,800 acres of sagebrush and basalt fields and the boundary stretches 39 miles from north to south and about 36 miles wide in its broader southern part. Boundaries are 29 miles west of Idaho Falls, 32 miles northwest of Blackfoot, 50 miles northwest of Pocatello and 7 miles southeast of Arco, Idaho.

Although annual precipitation in the NRTS area has averaged only 8.5 inches, underlying the desert plain is a huge natural underground reservoir of water in the basaltic lava rock. The lateral flow of this water is about one billion gallons per day Aquifer water is supplied principally from the North Fork of the Snake River. Additional water comes from the Big and Little Lost Rivers and Birch Creek, which start in the mountains to the north and sink into the porous soils of the NRTS area. The underground water seeps slowly at a rate of 10-20 feet per day to the south and west, emerging in numerous springs along the Snake River between Milner and Bliss, Idaho.

Major programs currently underway at the NRTS fall into five categories. One program provides test irradiation services from the two operating high-flux test reactors, the ETR and ATR. Another program operates the Chemical Processing Plant (ICPP) for recovery of uranium from highly enriched spent fuels. A third major program is that of light-water-cooled reactor safety testing and research. The Loss of Fluid Test (LOFT) and the Power Burst Facility (PBF) are the important projects in the reactor safety program. Other significant programs include the operation of the Experimental Breeder Reactor II and the operation of the Naval Reactor Facility.

The NRTS conducts extensive radiation surveillance activities. Radioactivity is released to the atmosphere and the Snake Plain Aquifer. In its environmental monitoring program, the Health Services Laboratory measures the levels of radioactivity in air and

groundwater samples and measures the gamma radiation exposure at onsite locations, communities near the NRTS boundary and distant background locations. The concentration of suspended airborne particulates and dust fall rates are also measured.

The NRTS surveillance results indicate that radioactivity in air, water, food and other media were a small fraction of acceptable standards.

The Idaho Radiation Control Program maintains a limited laboratory and field capability for environmental surveillance. Currently, the operation has been reduced to a stand-by status. Therefore, the State does not collect and analyze environmental media from the general area of the NRTS site.

Other Sources of Radiation

A unique source of environmental radiation is the basic ore processed in Idaho's phosphate industry, which is intermixed with natural uranium.

Analyses of ore samples collected from two phosphate processing plants showed the polonium-210 content to be between 12 and 24 picocuries per gram. During the process to drive off the organics and increase the relative phosphate content of the ore, approximately 85 percent of the polonium is lost as an atmospheric contaminant. This calculates out to about 27 curies/year of polonium from the combined effluents of the two plants. Although alpha radioactivity from this source has been detected in the atmosphere as far as fifty miles from the plants, the highest concentration above background was found to be approximately 1 percent of the maximum permissible concentration. In addition to the atmospheric releases of polonium-210, the large volumes of resulting waste material must be contained, controlled against removal and, if warranted by conditions, stabilized against wind and water erosion. Also the extent of any in-plant occupational exposure, the pathways and possible reconcentrations from the use of processed fertilizers should be determined.

Another source of environmental radioactivity is the radon concentrations in the numerous underground mines located in Idaho. Any excessive concentrations of radium daughters, primarily radon, indicate a need for more ventilation. The U.S. Bureau of Mines and the Idaho Mine Inspection Office are the enforcement agencies for radon levels in mines, but the radiation control program has an interest in knowing the number of mines, the magnitude of the exposure problems, and in making independent radon concentration determinations to assure protection.

Another source of environmental radiation is the two uranium tailings piles in Idaho, one near Lowman, the other near Salmon.

These piles of waste material contain low-levels of uranium and thorium decay products, especially radium. They contribute insignificantly to population dose, but they must be guarded against removal, as their use for fill material under buildings could create a major problem. The piles must be contained and stabilized against wind and water erosion if local conditions warrant such action.

Until recently, the Radiation Control Program was authorized to regulate only ionizing radiation sources such as radioactive materials and X-ray machines. Now the State can control both ionizing and nonionizing radiation sources. It is estimated that there could be as many as 600 nonionizing radiation sources in the State. These sources consist of microwave ovens, other uses of microwaves, lasers, infrared, shortwaves, ultraviolet light and ultrasonic sound. No reliable inventory of the numbers and kinds of nonionizing sources exists in Idaho and the extent of the hazard from these sources is not fully documented. No program activities are being conducted currently in the nonionizing radiation area because of insufficient program funds.

Radiation Control Staff and Budget

The Idaho Radiation Control Program consists of only two professionals operating on a meager total budget of $39,000. Both staff members are highly competent through education, technical short course training and experience. Although the number of medical, dental and industrial X-ray machines, the number of radioactive material sources, environmental radiation problems, responsibility for nonionizing radiation sources and administrative management duties have all increased, the staff has decreased from three and one-half man-equivalents in 1968 to two staff members.

The division of staff time by program area is approximately one man in the radioactive materials licensing and inspection program, one-half man-equivalent in the medical X-ray program, and one-half man-equivalent for all other aspects of operations. Because of the inadequate staff, radioactive waste materials are being sufficiently regulated but inspections and compliance in the medical X-ray area have been consistently inadequate. To illustrate, only 200 of 400 dental X-ray machines and 50 out of 400 medical X-ray machines were inspected during last year, with even fewer inspections in some past years. Over one hundred medical and dental X-ray machines have never been inspected. The two man staff is dedicated to its work and is trying exceedingly hard to do the job, but they are simply spread too thin to do all that is required and necessary.

Recommendations

The Idaho Radiation Control Program budget should be doubled to

provide $78,000 annually. In addition, $20,000 in non-recurring funds should be provided for needed radiation laboratory instruments.

The agency should employ an additional health physicist to strengthen the medical and industrial X-ray area.

The environmental radiation surveillance program should employ a laboratory health physicist and should be modernized and expanded. The program should operate at the minimum level necessary to provide Idaho with an independent assessment of radiation levels in environmental media around the NRTS. No effort should be made to duplicate the extensive surveillance already being conducted by NRTS. The enlarged surveillance program should also provide laboratory support for radioactive materials inspections, environmental monitoring of tailings piles and the natural contaminants of phosphate mill ore.

The Idaho Radiation Control Program should begin to determine the magnitude of the problems arising from the increasing number of nonionizing radiation sources. The first step should be the completion of an accurate inventory of the numbers, types, location and use of all nonionizing radiation sources. Regulations should then be adopted for the most critical sources.

CURRENT STATUS OF WATER QUALITY

In general, the waters of the State of Idaho are of excellent quality, in spite of intense use and a degree of river regulation that approaches that of the arid southwest. Although there are many instances of violation of water quality criteria, there is a certain ambiguity about the bulk of them that traces to definitional problems inherent in the State's water quality standards or to uncertainties in the knowledge of relationships between man-imposed circumstances and the natural geologic and hydrologic background. Conditions are less than ideal; but they are a far cry from those of the early nineteen-sixties, when monumental fish kills were an annual event in the Snake River. Much remains to be done; but the State of Idaho should be proud of the accomplishments that it has mounted in water pollution abatement over the last decade.

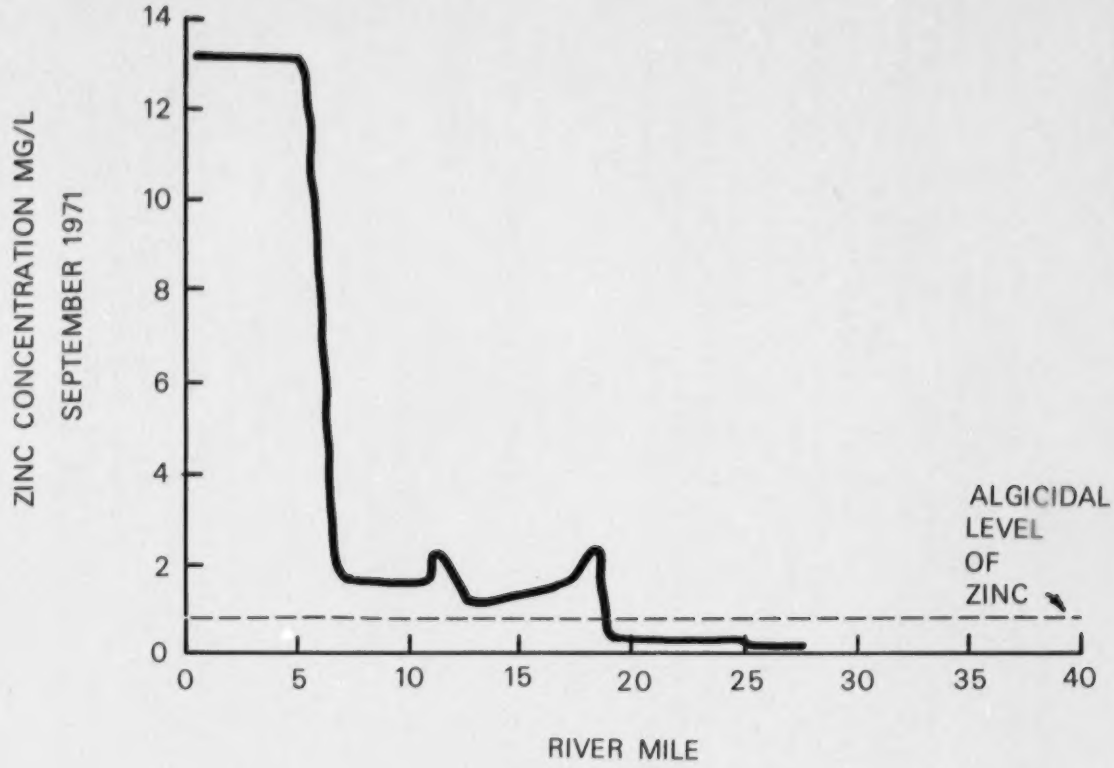
Spokane River Basin

The most seriously polluted waters in Idaho are to be found in the Idaho portions of the Spokane River system. This area has therefore, been the focus of considerable State, local and Federal water pollution control efforts.

The South Fork of the Coeur d'Alene River is the repository of wastes from the Bunker Hill Company smelters near Kellogg, of drainage from mines, leachates from tailing piles and from natural runoff. As a consequence, heavy metals (zinc, lead, cadmium, antimony, etc.) are found in solution in the waters of the South Fork and lower main stem of the Coeur d'Alene River, Lake Coeur d'Alene, and in the Spokane River in concentrations that are toxic to algae and fish. Phosphorous concentrations are well above levels sufficient to cause nuisance growths of algae. Coliform bacteria populations are excessively high below the raw sewage discharges to the South Fork and Coeur d'Alene Rivers. Below Bunker Hill, however, the water is so high in dissolved metals that its toxicity exercises an inhibiting effect upon populations of algae and bacteria. Largely tolerant strains of algae suited to the harsh conditions of the grossly polluted stream are to be found in its lower reaches.

Upper Snake River Basin

Water quality problems of the Upper Snake River are neither so pronounced nor so extensive as they were a decade ago. They do, however, exist.



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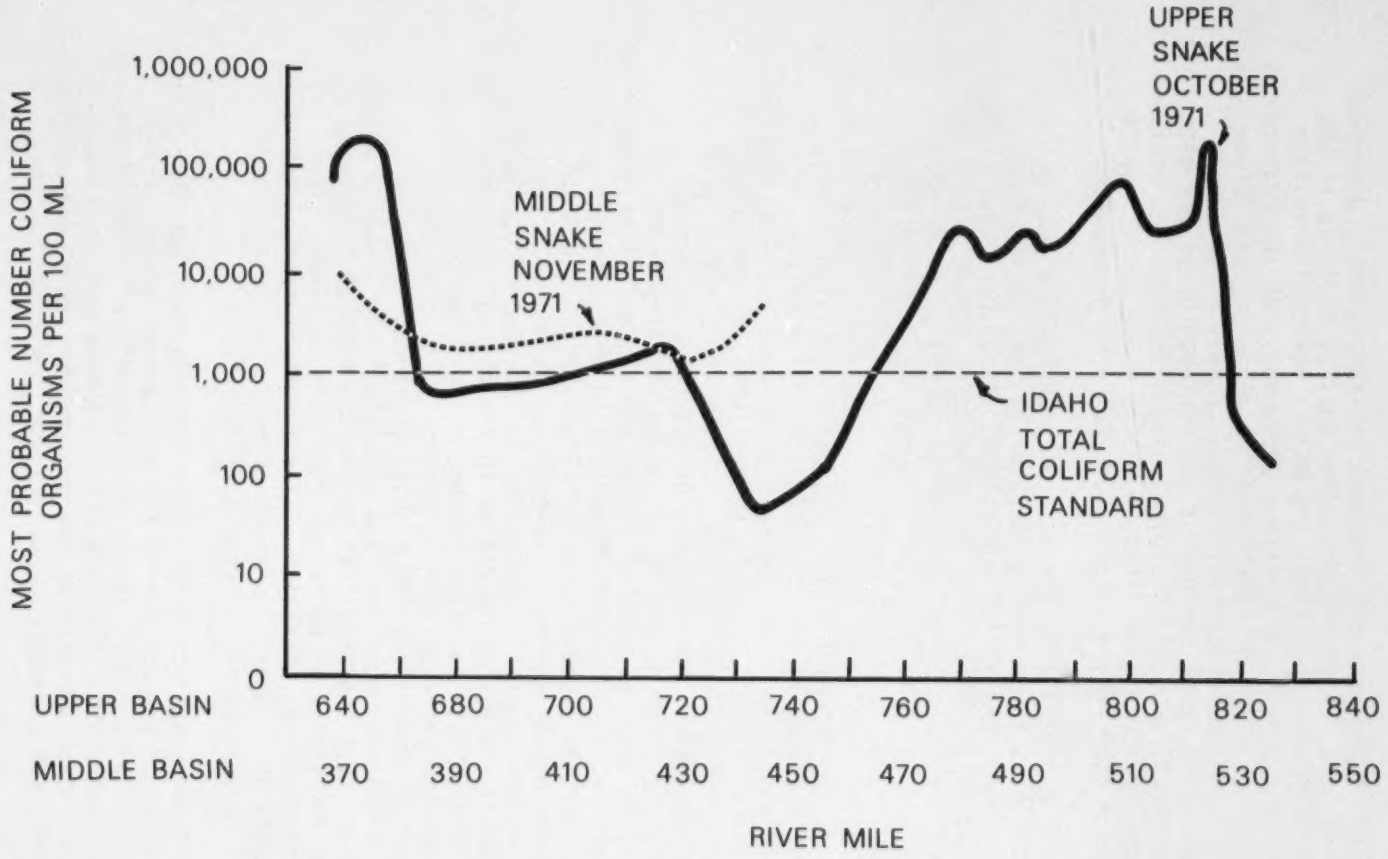
ZINC CONCENTRATIONS
SOUTH FORK, COUER D'ALENE RIVER

Dissolved oxygen concentrations are consistently depressed below levels set by the State's water quality criteria in the lower depths of American Falls and Milner reservoirs in late summer and early fall--a function, presumably, of temperature stratification, decay of organic bottom deposits, and inflow of oxygen-deficient subsurface springs as well as of waste discharges. The lower reaches of the Portneuf River are also characterized by seasonal dissolved oxygen deficiencies created by the combination of low flows, elevated temperatures, waste discharges of the Pocatello area, and entry of groundwater.

Violations of the bacterial criterion would appear to be common. Indeed, an October 1971 water quality survey found ostensible bacterial violations predominant on portions of the Upper Snake River during the food processing season: over 50 percent of the stream miles between Idaho Falls and Milner Reservoir were determined to be in excess of 1,000 coliform organisms per 100 ml. Such bacterial levels were found in major service areas along the Snake. Considerable uncertainty attaches to the appearance of a standards violation, however, because of a statement of the bacterial criterion that is profoundly unsatisfactory. Idaho uses a total coliform standard--1,000 MPN/100 ml--but imposes a hedge--"when attributed by sanitary survey to fecal sources." Given the complexity of bacterial dynamics, the interplay of naturally occurring organisms with those occurring in sewage and from runoff of grazing lands and the cycle of dieoff and regrowth in highly fertile waters, it is almost impossible to determine the correspondence of excessive bacterial population and fecal source necessary to define a violation of standards. The correlation may logically be implied in the case of sanitary sewage, but it is harder to assume in the case of industrial wastes. What the larger significance of this may be we can not say--no one has been able to precisely fix the public health significance of a given population concentration of coliform organisms, much less the ecological significance of any such number. But the practical regulatory problem imposed by an ambiguous definition of bacterial violation is clear. It is almost impossible to establish effluent control requirements in the instance of industrial sources of bacteria, in that it is difficult to demonstrate a certain violation.

The Upper Snake River runs a characteristic green over most of its length of passage during the warm summer months, except where turbidity is high. Dense, floating mats of algae blooms and colloidal plant suspensions are evident throughout the summer. Identification of the sources and controllability of the problem is, however, yet a matter to be resolved. Municipal wastes,



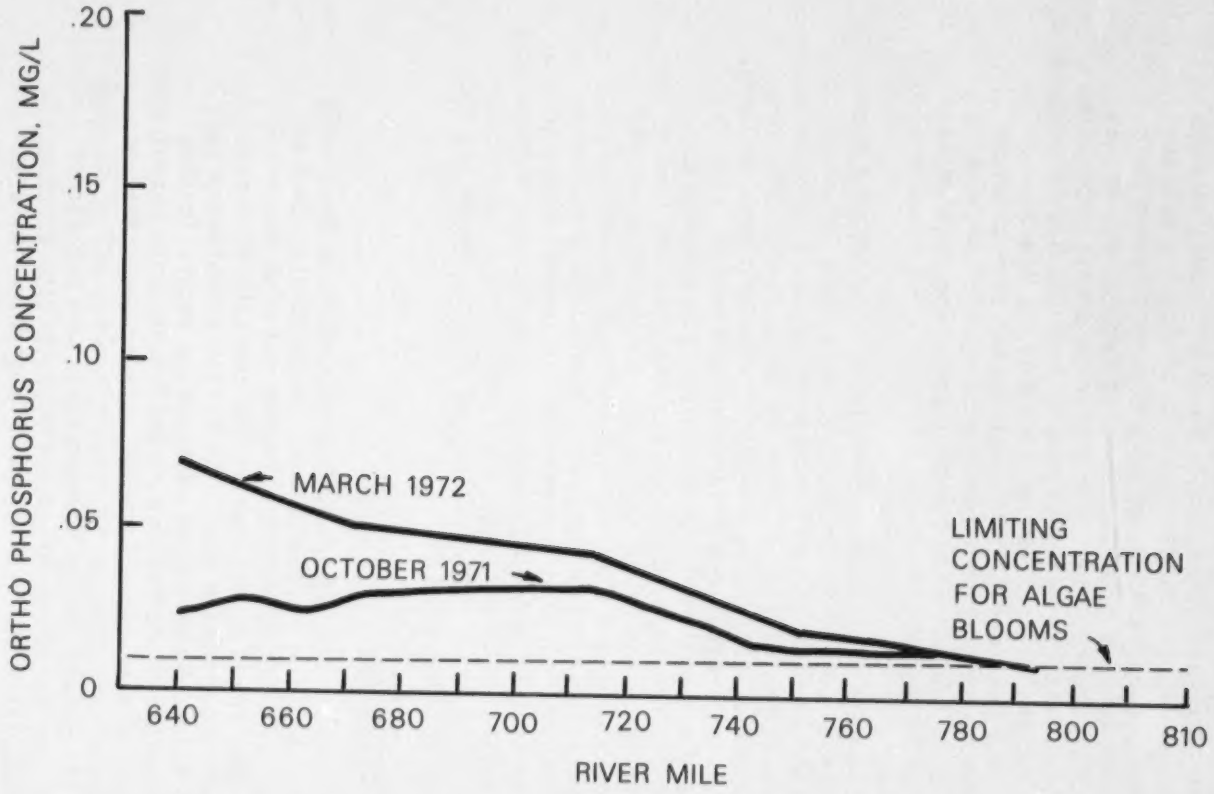
BACTERIA IN UPPER AND MIDDLE SNAKE RIVER

probably enriched by phosphate-base detergents, are an obvious source of phosphorous in the Upper Snake Basin as elsewhere in the Nation. But there are other, and more significant, sources as well. At Pocatello, two large phosphate processing plants operate. The soil-laden wash wastes of potato processors have also been measured to be a rich source of phosphorus during the processing season, larger in sum that either phosphate processing plants or municipal wastes. Natural runoff from the highly phosphatic soils and from phosphate mines may well be a prime source of phosphorus. And recirculation of phosphorous through decomposition or organic matter settled to the bottoms of reservoirs unquestionably adds further to nutrient loads. The problem is complex and is of long duration.

Tributary streams of the Upper and Middle Snake Basins are in several instances considerably more polluted than the Snake itself. The lower reaches of the Portneuf River, as noted above, suffer dissolved oxygen depletion, high bacteria counts, and very high concentrations of phosphorous. Main Drain and Aberdeen Drain, agricultural sewers flowing into Milner and American Falls Reservoirs, are the repositories of municipal and industrial wastes that result in dissolved oxygen deficiencies and high bacteria populations. The lower stretches of Rock Creek carry an enormous volume of waste from a sugar refinery as well as drainage from Twin Falls, a potato plant, and outlying fields and pastures. Though the slope of the creek is great enough to permit reaeration sufficient to obviate dissolved oxygen difficulties, its bacterial quality does not meet the State's standards, and the stream transmits its biochemical oxygen demand, bacteria, and turbidity to the receiving Snake.

Middle Snake River Basin

In many respects, the water quality condition of the Middle Snake River (Milner Dam to Brownlee Dam) recapitulates that of the Upper Snake. Excessive aquatic growths and high bacterial concentrations are found downstream of the juncture with the Boise River and into Brownlee pool. Depressed dissolved oxygen concentrations in the lower depths of Brownlee Reservoir also mar water quality that is otherwise in conformity with established criteria. There is also--totally expectable in an irrigation economy--a progressive increase in total dissolved solids through the length of the Snake, though concentrations do not attain serious levels; and instances of excessive turbidity are not uncommon. Causes, like the violations of the criteria, are



ORTHO PHOSPHORUS CONCENTRATIONS IN UPPER SNAKE RIVER

similar to those found in the Upper Snake area, with the exception that there are no known, significant natural sources of phosphorous runoff in the middle basin proper.

The Boise River contains a whole series of water pollution conditions. Less polluted than the Coeur d'Alene River, it is far more polluted than the Snake River into which it flows. Both bacterial and dissolved oxygen concentrations consistently violate established standards, and phosphorous concentrations are well above levels required to trigger algae growth. The fact that severe algae problems have not been found to exist in the Boise River Basin may be due to other limiting factors such as turbidity or hydraulic conditions. All of these problems are compounded by excessive turbidity and elevated summer temperatures in the river's lower reaches. Water quality deterioration begins at Boise, and after a moderate recovery, swift and near endemic deterioration resumes with the entry into the stream in rapid succession of the wastes of Caldwell and of Indian Creek which carries the wastes of Nampa. The sources of the pollution are entirely conventional, organic municipal and industrial (largely food processing) wastes in volumes too great for the sluggish, warmed, and irrigation-depleted stream to assimilate. The quality of the Boise River has swung pendulum-like from better to worse several times over the last decade and a half as steadily increasing prevalence and intensity of waste treatment has intermittently caught up with, then fallen behind the rate of increase of waste production in the most densely populated, irrigated, and industrialized watershed in the State.

Lower Snake Basin

The major tributaries to the Snake below Brownlee Dam, the Salmon and Clearwater River systems, are superb, almost unspoiled waterways with the exception of high dissolved gases on the Clearwater below Dworshak Dam. The Palouse River, a sediment-choked, bacteria-ridden, near intermittent stream, is of abysmal quality and consistently in violation of standards in its lower reaches. To what extent that quality can ever be remedied is uncertain, in that the physical circumstances governing the stream's nature (intermittent flow, unstable soils, modest slope) are not conducive to naturally high quality.

The lower Snake River itself is generally of excellent quality, again, except for high dissolved gas levels. A pocket of waste discharges at Lewiston (pulp and paper production, food processing, municipal sewage) has a discernible, though hardly significant effect, including apparent violations of the bacterial standard from time to time that are as ambiguous

as those found upstream. Considerable concern has been expressed, however, for the water quality conditions which will exist after the stream is converted into a series of pools by the completion of Lower Granite Dam. In the last half decade, too, floating aquatic slimes have appeared in the lower Snake, occurring in the reach of the river from Brownlee Dam to the confluence with the Clearwater River during low flow periods. These are apparently transmitted downstream with nutrient concentrations of the upper river, the evidence and effect of those nutrients relaxing with dilution by the inflows of the Salmon and the Clearwater.

A more severe problem--one common to the lower reaches of the Columbia River system, and one that threatens to eliminate the Columbia River salmon--is supersaturation of dissolved gasses through the lower Snake River. Supersaturation has been documented at lethal levels (equal to or greater than 120 percent) below Brownlee, Oxbow, Hells Canyon, and Dworshak, Lower Monumental, Ice Harbor, and the incomplete Lower Granite Dams during periods of high spillway discharge. Idaho has adopted a dissolved nitrogen criterion of 110 percent of saturation, but there is great question as to ability to meet that criterion with present reservoir management technology.

Groundwaters

Groundwater quality is not presently subject to legal standards nor is it as definable as the quality of surface waters. The addition of the third dimension, the concealment of the enveloping mantle of soil, invests all matters associated with groundwaters with a greater degree of uncertainty, a lower order of predictability. Groundwater pollution tends to be episodic rather than dynamic--a contaminated well is discovered from time to time, but one can seldom relate that contamination to a source or predict either its spread or its reversal with any degree of confidence. In dealing with groundwaters, then, it is the possibility of pollution and the difficulties of clean-up rather than the demonstration of pollution which most concerns us. And our strategy must be protection rather than abatement.

At least two, and possibly three, threats to the quality of Idaho's groundwaters can be discerned. Subsurface disposal of wastes, if not stringently controlled, can pollute groundwaters. At least 5,000 well disposal sites, including sites for disposal of irrigation tailwaters, have been identified along the Snake Plain. The Spokane River Basin already has a serious groundwater pollution problem. In the past, mine operators discharged wastes directly into the South Fork Coeur d'Alene River and its

tributaries. These wastes were spread across the valley during flood seasons and percolated into groundwaters. Though the practice has been stopped, old tailings deposits continue to contribute to pollution of groundwaters by heavy metals. Similar pollution of the great Snake Plain aquifer remains a possibility, even though a dim one. Since the aquifer receives the wastes of the National Reactor Testing Station, potentially radioactive, that possibility can not be lightly dismissed. Concentration of farm animals in feed lots and dairies presents the continuing threat of nitrate pollution of groundwaters throughout the State.

A more specific threat to groundwater quality is to be found in the Boise River Basin. Two distinct groundwater resources occur in the area, an underlying one in the basaltic lava flows and an alluvial deposit recharged by irrigation. At many places in the valley, deep wells have been sunk to relieve artesian pressure and drain land that has been waterlogged. Any large groundwater development based on the artesian source could result in its pollution by recharge from the easily polluted alluvial aquifer's flow through the relief well channels.

CURRENT STATUS OF AIR QUALITY

National ambient air quality standards include primary and secondary standards for six classes of air-borne pollutants: particulate matter, sulfur oxide, carbon monoxide, nitrogen dioxide, hydrocarbons, and photochemical oxidants. Primary standards are set at levels designed to protect public health. The more stringent secondary standards are intended to protect public welfare against any known or anticipated adverse effects of air pollution.

Four of these six pollutants--carbon monoxide, nitrogen dioxide, hydrocarbons, and photochemical oxidants--are directly or indirectly the result of emissions from the automobile. Adherence to the standards established for these pollutants, then, is directly related to the number of automobiles in any region. The number of automobiles is a direct function of population density. In the absence of measured air quality data for these pollutants in this region where urban place population is less than 200,000, it is assumed that the standards for these pollutants are met in Idaho.

These four automobile pollutants are not predicted to present a threat to Idaho's air quality in the immediate future. It is scarcely conceivable that the State's population growth could increase the quantity of emissions fast enough to exceed ambient air quality standards, given the expected radical improvement of unit emissions as a consequence of current national regulations for automobiles. Over the long run, more efficient transportation modes should eventuate at a rate sufficient to relieve any possibility of significant pollution.

Industrial process losses are the principal source of violations of ambient air quality standards for sulfur oxides (SO_x) in Idaho. The association of SO_x with large industrial operations makes the sources responsible for standards violations of this pollutant category the easiest to identify. In Idaho, the violations of sulfur oxide standards, which occur in two regions, are the result of emissions of a specific industry in each region. In the Pocatello area, the degree of control of SO_x emissions necessary to

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VIOLATIONS OF NATIONAL AMBIENT AIR QUALITY STANDARDS AND THEIR SOURCES

Pollutant	Air Quality Control Region 61	62	63	64
Particulates	Violations of primary and sec. stds.	Violations of primary and sec. stds.	Violations of primary and sec. stds.	Violations of secondary standards
SO_x	Violations of primary and sec. stds.*	Violations of primary and sec. stds.	Standards met	Standards met
CO	Standards met	Standards met	Standards met	Standards met
Photochemical oxidants	Standards met	Standards met	Standards met	Standards met
Hydrocarbons	Standards met	Standards met	Standards met	Standards met
NO_2	Standards met	Standards met	Standards met	Standards met
PERCENT OF PARTICULATES BY CATEGORY OF SOURCE				
Fuel combustion	9.6%	4.9%	19.5%	34.9%
Industrial process loss	52.0%	17.0%	2.9%	31.5%
Solid waste disposal	26.7%	75.5%	74.2%	11.3%
Transportation	8.5%	2.3%	3.0%	20.9%
Other	3.2%	0.3%	0.4%	1.4%
PERCENT OF SULFUR DIOXIDE BY CATEGORY OF SOURCE				
Fuel combustion	11.0%	0.9%	74.2%	82.3%
Industrial process loss	84.0%	98.7%	--	--
Solid waste disposal	0.2%	--	1.0%	0.8%
Transportation	4.8%	0.4%	24.8%	16.9%
Other	--	--	--	--

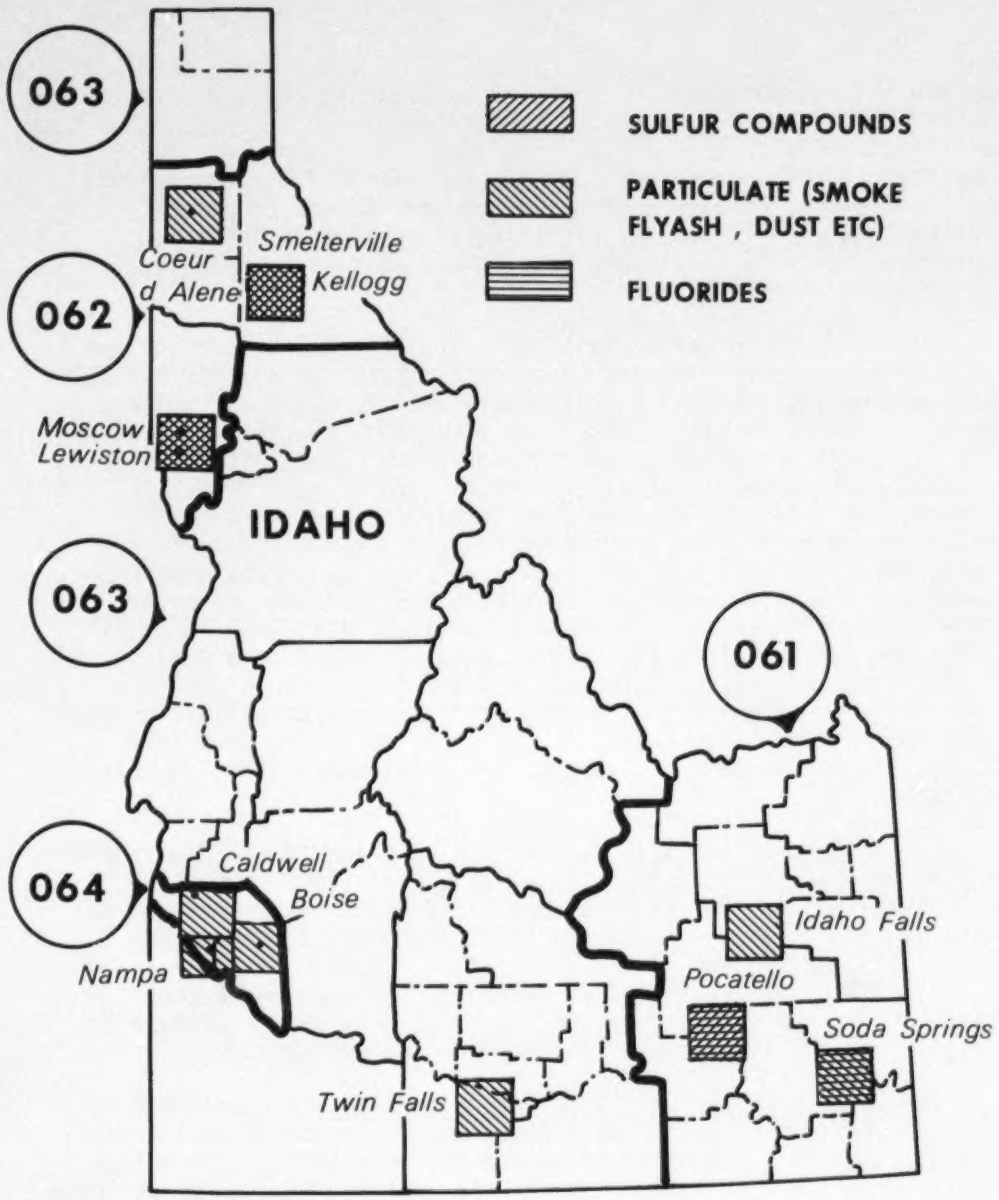
*Attributed to a single source.

achieve the standards can be achieved by applying available technology at the Simplot Company phosphate processing plant. A program has been identified. The control of SO_x emissions from the Bunker Hill Company Smelters necessary to achieve the standards in the Kellogg area is a highly complex problem and may exceed the bounds of reasonably available control technology. Control of these two sources would bring about compliance throughout Idaho with the sulfur oxide standards.

With respect to particulates, air quality control options are not nearly so clear. Ambient air for all Idaho air quality control regions contain instances where primary and secondary air quality standards for particulate matter are exceeded. However, all sources of particulate matter emissions are not known. Modeling studies indicate that known, inventoried sources such as open and slash burning, are not alone responsible for high ambient particulate matter concentrations in certian areas; i.e., the air quality levels predicted by a diffusion model to occur as a result of known, inventoried particulate matter sources are not as high as those actually found to occur. It seems very likely that high "natural" background particulate matter levels, and emissions from unmeasured or uninventoried sources make up the difference. It is possible that unstable soils and high winds, agricultural activities, unpaved roads and parking lots, fugitive dust from industrial activities, etc. may be the predominant part of the total particulate problem in Idaho.

Particulate matter will receive a high priority in Idaho's air quality improvement programs. An EPA/State of Idaho study is underway to define the extent of the particulate matter problem in Idaho and identify the sources of particulate matter which are contributing to ambient particulate matter values. Control strategies for the attainment of secondary particulate matter standards must be submitted to EPA by Idaho July 1973. (Figure 1 presents general locations of inventoried sources only.)

The Eastern Idaho Intrastate Region (Region 61), comprised of the State's fourteen easternmost counties, contains violations of national ambient air quality standards for both particulate matter and sulfur oxide. Existing fluoride air quality data (a non-criteria pollutant) is also showing high ambient air concentrations. The area's phosphate processing industry is the prime source of particulate matter, sulfur oxides, and fluorides. Monsanto Company (Soda Springs), FMC Company and the Simplot Company (Pocatello)



MAJOR AREAS OF AIR POLLUTION

AIR QUALITY CONTROL REGION	KNOWN PARTICULATES*		SULFUR OXIDE	
	TONS/YR	PERCENT	TONS/YR	PERCENT
061	8,940	14.8	14,224	13.2
062	15,980	26.6	87,035	81.0
063	32,038	53.3	3,620	3.4
064	3,144	5.3	2,524	2.4
TOTALS	60,102	100 %	107,403	100 %

*THESE FIGURES REPRESENT INVENTORIED PARTICULATE EMISSIONS IN 1970.

THE SOURCES OF MUCH OF THE PARTICULATE MATTER IN IDAHO REMAIN UNKNOWN AND UNINVENTORIED.

TO MAKE LONG-TERM CONCLUSIONS ON THE SEVERITY OF THE PARTICULATE PROBLEM FROM THIS DATA IS NOT POSSIBLE

EMISSION INVENTORY
SUMMARY FOR STATE OF IDAHO 1970

discharge particulate matter, gaseous and particulate fluoride compounds, and phosphorous pentoxide. The Simplot Company is the prime source of air-borne sulfur compounds and ammonia. Contributing also to the known particulate matter presence in Region 61 is the burning of solid wastes in sawmill conical burners.

The Eastern Washington-Northern Idaho Interstate Region (Region 62), comprising the four most populous and industrialized counties of northern Idaho, experiences ambient air violations of primary and secondary air quality standards for sulfur oxides and particulate matter. An estimated 99 percent of the sulfur oxides occur as a result of the operations of two Bunker Hill Company smelters. This smelter complex is also a significant source of known particulate matter. The confining topography of the Kellogg Valley, which tends to hold pollutants in place rather than permitting them to disperse, compounds the pollution problem.

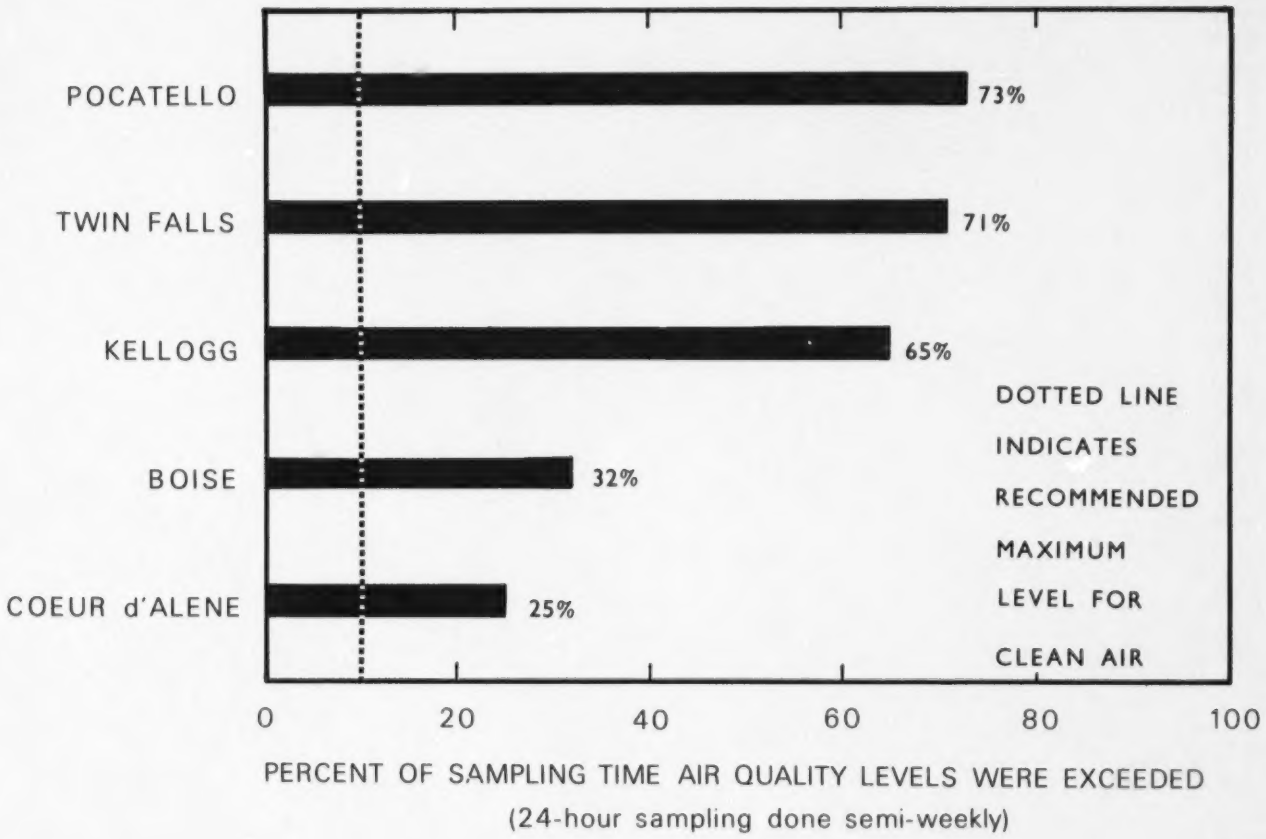
At Coeur d'Alene and in the area around Lewiston, sawmill conical burners are significant sources of known particulate matter although the Potlatch Forest Company's (PFI) pulp and paper mill at Lewiston is the predominant source of known particulate matter and odorous sulfur compounds. The PFI mill's environmental influence is heightened by its location along the Snake River--the river valley walls channel the winds along the air stream above the river. Condensation of droplets on particulate matter, and water vapor emitted by the mill intensify fog formation and contribute to visibility problems.

Ambient air over the Metropolitan Boise Intrastate Region (Region 64) experiences violations of secondary air quality standards for particulate matter. Fuel combustion and industrial process losses are the principal known source of particulate matter in this region. In Nampa, the Amalgamated Sugar Company refinery is the major stationary source of known particulate matter. Industrial process losses originate largely from asphalt and ready-mix concrete operations. Furthermore, the Metropolitan Boise Intrastate Region, the most highly populated area in Idaho, is the only region to experience any significent emissions from automobiles and aircraft. During periods of severe inversion, some reduction in visibility is attributed to exhaust emissions from vehicles.

The Idaho Intrastate Region (Region 63) is composed of the area not included in the other three regions. Solid waste disposal and fuel combustion contribute the major portion of conventional or known particulate matter emissions. Twin Falls, the only sizeable community in this vast area, can experience some of the air quality difficulties associated with population concentration and consequent emissions from automobiles, industrial activities, and

space heating. Location on a flat, cultivated, windy plain causes Twin Falls to experience an air pollution problem in the form of windblown dust. These factors combined cause particulate matter levels in Twin Falls to exceed both primary and secondary ambient air quality standards.

SUSPENDED PARTICULATE SAMPLING
FY 1971



SOURCE: Idaho's Critical Health Indices, 1972. Idaho Department of Health, Boise.

SOLID WASTES MANAGEMENT

Any attempt to characterize the nature of the solid wastes management problems in Idaho must begin with an important disclaimer: The nature of the solid wastes problem in Idaho is difficult to quantitatively characterize. The State is large, its population small and scattered, its economic base largely agricultural. Inventorying and classifying the hundreds of scattered disposal problems in the State is a monumental task in itself--as illustrated by the maps in this chapter locating only those authorized disposal areas. On the other hand, the application of national averages, national costs estimates, and--in some respects--the national approaches carry inherent potential for losing the real world picture of solid wastes in Idaho.

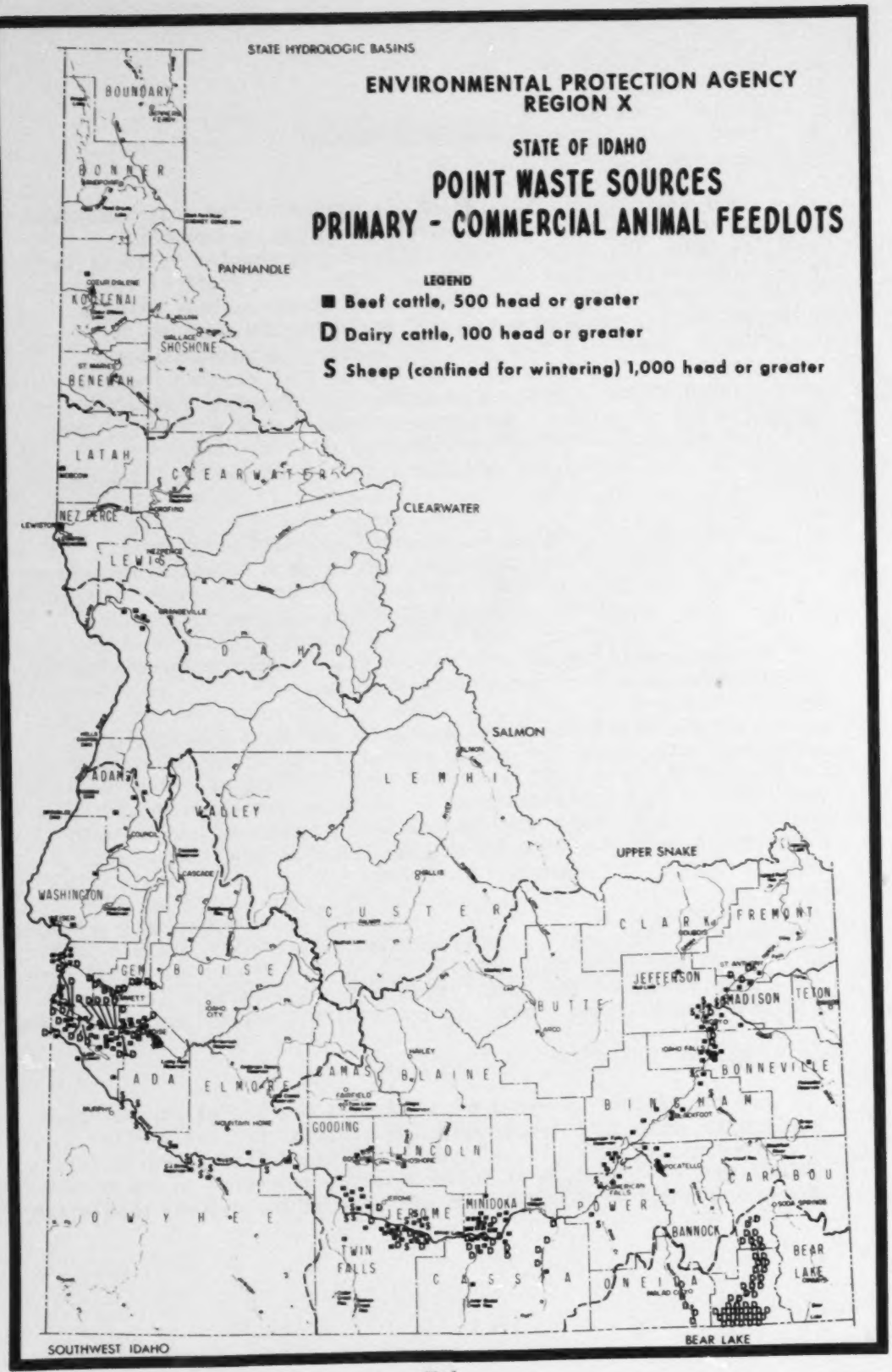
Idaho has but one city over 50,000 population and only nine over 10,000. Her population density is 8.6 people per square mile, compared to a national average of 57.5. Obviously, successful solid waste management systems demonstrated effective for, say, St. Louis are not likely to be appropriate for solution of the majority of solid wastes problems in Idaho, the scattered small towns and agricultural and forestry wastes.

Again, Idaho must innovate. Given her high sensitivity to environmental protection needs, she must develop those approaches which will solve her own problems which are in many ways unique to her State. Care must be taken as she reaps the experience and techniques of more wealthy States in addressing the solid waste management that she takes the wisdom of those experiences and adapts them to her economy and people.

The small staff of the IDEPH on solid waste management programs are aware of the nature of solid wastes generated in Idaho. Their report, Solid Wastes Management, 1970, Status Report and State Plan, is a compilation of the best information yet available (collected in 1966) and outlines a plan for addressing the problems it describes.

Solid Wastes Generation - A "Mini" Look

If the national average of 5.3 pounds per capita per day were applied to Idaho to estimate domestic waste alone (residential and commercial), it could be grossly estimated that approximately 38,000 tons of this type of solid waste is generated in Idaho each day with a total of 700,000 tons per year at the present population.


STATE HYDROLOGIC BASINS
ENVIRONMENTAL PROTECTION AGENCY
REGION X
STATE OF IDAHO
POINT WASTE SOURCES
PRIMARY - COMMERCIAL ANIMAL FEEDLOTS
LEGEND
■ Beef cattle, 500 head or greater
D Dairy cattle, 100 head or greater
S Sheep (confined for wintering) 1,000 head or greater
BOUNDARY
BONNER
PANHANDLE
KOOTENAI
SHOSHONE
BENEWAH
LATAH
CLEARWATER
NEZ PERCE
LEWIS
IDAHO
SALMON
ADAMS
WASHINGTON
PAYETTE
WEISER
GEM
BOISE
ADA
ELMORE
OWYHEE
TWIN FALLS
CUSTER
LEMHI
VALLEY
BOISE
CAMAS
BLAINE
GOODING
LINCOLN
JEROME
MINIDOKA
CASSIA
UPPER SNAKE
CLARK
FREMONT
JEFFERSON
MADISON
TETON
BUTTE
BONNEVILLE
BINGHAM
POWER
BANNOCK
CARIBOU
ONEIDA
BEAR LAKE
SOUTHWEST IDAHO
BEAR LAKE

It is estimated that at least 235 tons of community refuse are burned daily in Idaho to produce 33 tons of hydrocarbons and 18 tons of particulate matter.

There are over a thousand commercial animal feedlots in Idaho which produce more than an estimated 15,000,000 wet tons[1] of manure in Idaho every year and, of this amount, 2,700,000 tons have to be transported.

Sawmill and logging debris was estimated to range from a high of 4,300,000 tons to a low of 4,100,000 tons annually in 1966.

Fruit and crop residue amounted to an estimated 3,700,000 tons in 1967.

These rough estimates of wastes generated are given as examples of the type and dimension of the solid wastes in Idaho. Some of the "wastes" are undergoing re-use and/or managed disposal, as for example the use of crop residues for cattle feed. Much is not being put to reuse and is being stockpiled or burned.

Existing Conditions, Practices and Problems--Domestic Refuse

In the original solid wastes survey of community disposal sites in Idaho, 271 were recorded. Since that survey, 124 sites--some not included in the original survey--have been closed. The remaining operations are either sanitary landfills, modified landfills, or open dumps. Together, these account for 211 disposal sites: 23 are sanitary landfills; 27 are modified landfills; and 85 are open dumps without burning or obvious actual or potential water pollution; 52 are dumps or modified landfills where frequent burning occurs; and 24 are dumps or modified landfills where actual or potential water pollution is evident. Fewer water and air pollution problems are associated with modified landfills than with open dumps of similar size.

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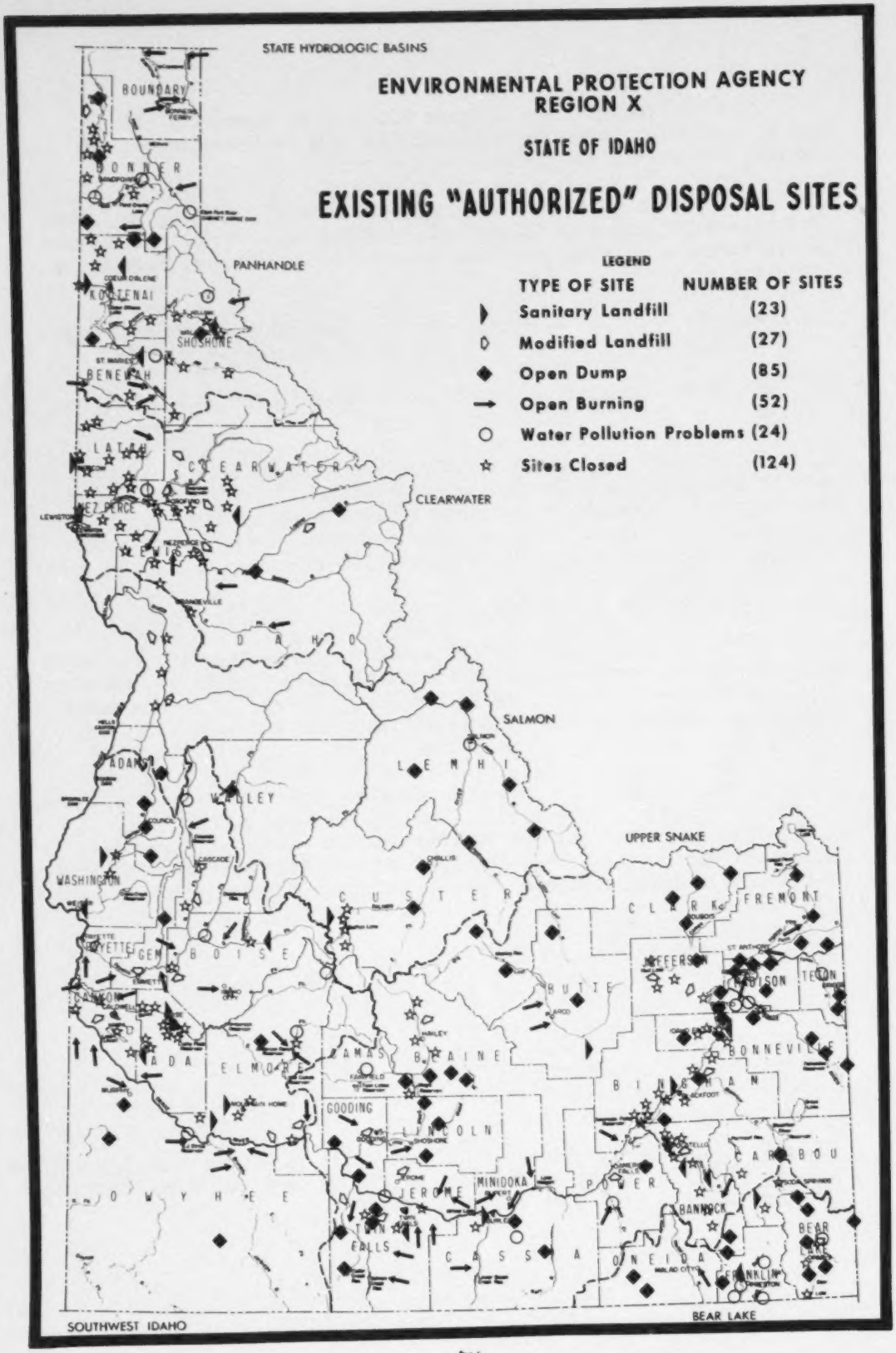
[1] Roughly equivalent in terms of BOD potential to wastes from 3.6 million people. The figure includes animal wastes in confined areas from hogs, chickens, sheep, milk cows and beef cattle.



Reproduced from best available copy.

Totalling these numbers, we find that 124 disposal areas have been closed and 211 operations of various types are currently in existence. Many that have been closed are small community dumps where the wastes are now being taken to another site. This means that many of the remaining disposal operations, particularly the sanitary landfills, are receiving more wastes and serving a larger number of people than they had in the past. Figure 1 shows the distribution of these disposal sites in the State.

Conclusions

The public attitude of "use it, throw it away, and forget it" yet prevails in Idaho as indeed it does in much of the country. A major program thrust has yet to be mounted to inform the public, train the personnel, develop the financing and managing organizations, develop plans of action for sound management, and begin to develop the financing capabilities through user charges to undertake sound solid waste management in Idaho. Hopefully, this condition is temporary, awaiting but the program development work and political support to get fully underway.

Unfortunately, solid waste management yet rates as a low priority in consideration of environmental needs and in the allocation of manpower and dollars at the State and local levels. While the most onerous "dumps" are being addressed, comprehensive solid wastes management systems in Idaho are not rapidly coming into existence.

Dump closing is commonly used as a criteria for measuring the effectiveness of a solid waste management program. Yet dumps represent only one part of the solid waste management system - the one which is most apparent. The collection element, which usually represents 60-85 percent of the total cost for solid waste management is not well known nor understood by the citizenry who must support, plan and fund it.

Dumps cannot rationally be closed without regard to many related matters including the provision of alternative sites which will be an improvement over the site vacated. This cannot be accomplished without some degree of planning. Questions must be addressed and answered: Which sites should be closed, who will close them, what will the costs be, and what will be the source of funding (costs for equipment, manpower, transportation to and from the site, clean up, cover material, fences, gates, signs, patrol of the site, public information, etc.). A more valid criteria

with which to evaluate a community's progress is to rate its overall solid waste management program (organization, resources, financing, enforcement, etc.) and the continuing effectiveness of that program.

Local officials and citizen groups in Idaho are becoming more aware and involved in the resolution of solid waste management problems; but it is being addressed at a low priority relative to the degree of solid wastes problems. As that priority increases, it should be remembered that significant improvements in solid wastes management cannot be achieved solely through enforcement. Local areawide solid waste management plans must precede actual development of solid waste management systems, e.g. decisions must be made with regard to development of collection and transfer systems, closure or conversion of open dumps to sanitary landfills, location, design and operation of regional processing and disposal sites, establishment of administrative organization(s), means of funding, staffing, etc.

Officials of the IDEPH have developed an approach for the resolution of solid wastes management problems in Idaho in the State solid waste plan referred to earlier. A principal fact yet to be faced--and possibly the major impediment to immediate aggressive action--is cost. Grossly estimated, the various planning entities at the local levels in the State should be spending about four to six hundred thousand in the development of short range and long range planning and implementation programs. Planning is now underway in one District Health Department but local planning groups have been constrained by inadequate funding (included the Federal level) from meeting the State's goals for completion of those plans.

Those sums pale to insignificance, however, in comparison to the costs which the citizens of Idaho must meet to provide for the solid wastes management systems themselves, for capital investment, operation, and collection services. With no economic analyses at all, it is grossly estimated the bill to be met ranges into the millions over the next five years. The cost per user, obviously, must be a more reasonably manageable figure, affordable on a monthly basis by most Idahoans.

Accurate estimates of costs to individuals based upon analysis of the appropriate system for each area must be a product of the solid waste plans repeatedly emphasized here. That approach is

the basic strategy in the IDEPH program for solid wastes management. But the staff of the IDEPH is yet at minimal levels, too few to respond well to all citizen concerns much less assure the completion of solid waste management plans throughout Idaho. Their time is devoted to training of operators, to technical assistance in site selection and review of site plans and specifications, to development of those statewide regulations which will provide the standard of performance for those charged with planning and operations, to enforcement against those most serious dumps, and to development of cooperative arrangement for resolution of immediate needs in an effective way. Recommended staff increases in solid wastes management are presented in an earlier chapter. Those figures are presented as a beginning, to provide that cadre of experts and administrators to provide program development in solid wastes management in Idaho.

For purposes of emphasis, a list of programmatic achievements intended to describe a fully developed solid waste management program in a State agency is presented below. The principles and ideals thus described are the desirable end to be achieved in the next five years in the IDEPH.

Phase I - Resolve immediate solid wastes management problems: Develop short range, interim plan-program to address immediate problems and needs. Utilize existing technology to identify problems and accomplish improvement to meet present State and Federal standards and requirements.

1. Elimination of pollution from disposal sites and facilities by closure of site or conversion and upgrading; an estimated 150-200 dumps converted to sanitary landfills. (By 1977)

Phase II - Planning-implementation programs addressing long range problems and needs and formulating proposals for all elements of the solid waste management systems including establishment of regional organizations to administer solid waste management program, e.g. financing, regulations and control, etc.

1. Optimization of the storage, collection, transfer, processing and disposal systems, for all types of solid waste management as needs, technology and resources advance.

2. Establishment of centralized-regional sanitary landfill processing disposal sites with recycling facilities in regions of the State.

3. Establishment of regional systems of rural collection drop boxes-transfer stations with recycling containers and mobile compactors where needed.

4. Development of regional programs for management of special wastes, e.g. hazardous wastes, feedlots, agricultural and industrial waste, wood wastes, abandoned vehicles, tires, oils, institutional and recreational wastes, etc.

5. Establish areawide organizations to administer solid waste management program (support, promote/PR, financing, legislation, rate charges, etc.).

6. Develop and adopt alternative methods and schedule for financing region solid waste management systems.

7. Develop legislation, ordinances, interagency agreements, standards and criteria, enforcement.

8. Develop training program for operators and middle management personnel.

9. Develop public information/relations program for continued support.

10. Market analysis for recycling; phase recycling into regional disposal sites as markets are developed.

11. Develop management information system for measurement of progress, review and updating of regional planning-implementation programs.

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